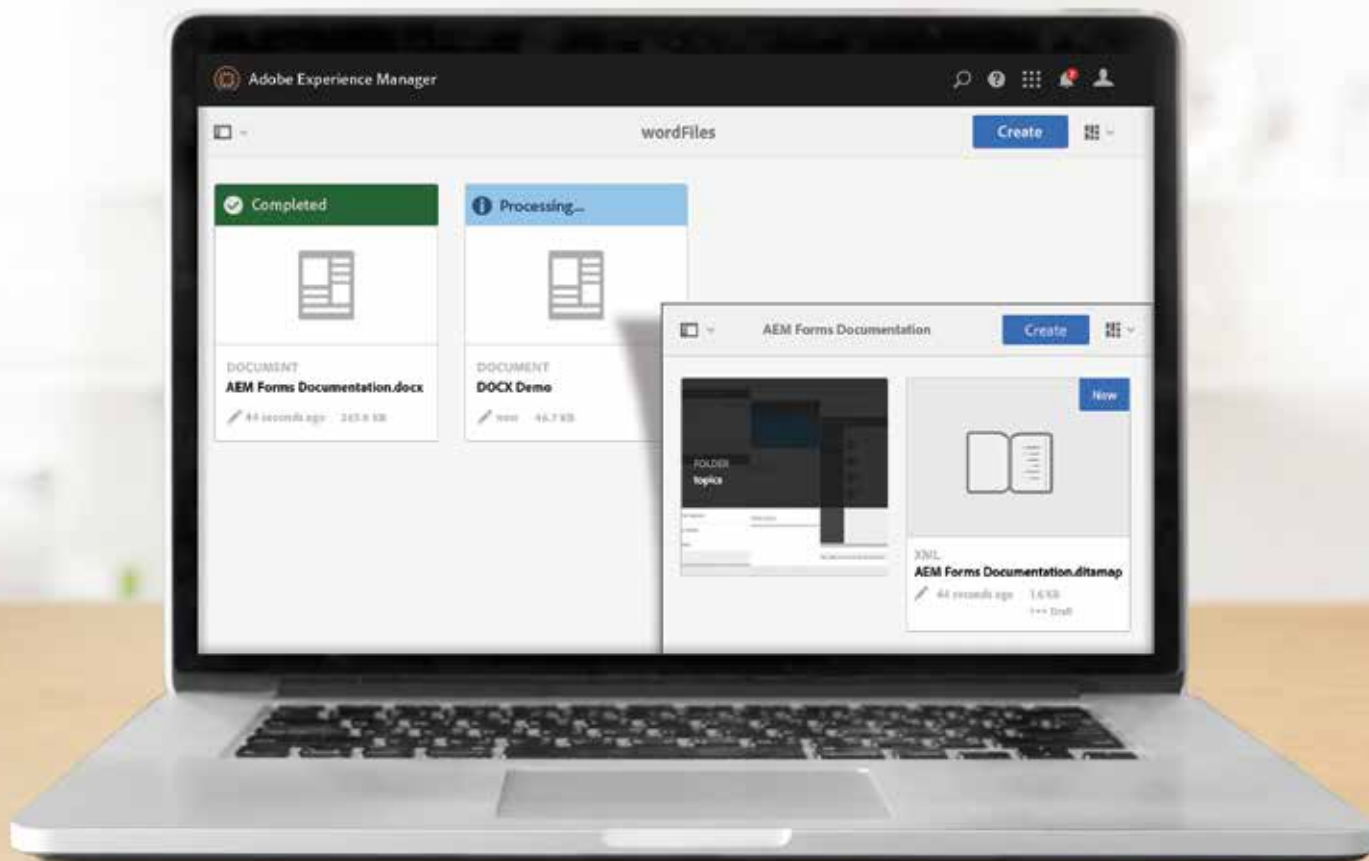# Technical
COMMUNICATION

Journal of the Society for Technical Communication

Easily migrate legacy content to DITA

Smoothly convert Word and unstructured FrameMaker content to DITA with out-of-the-box automated conversion support in **XML Documentation Add-on for Adobe Experience Manager**

To know more, visit **bit.ly/DITA-CCMS**

For a personalized demo or questions, write to us at **techcomm@adobe.com**

Society for Technical Communication

What is a technical communicator? Technical communicators develop and design instructional and informational tools needed to ensure safe, appropriate, and effective use of science and technology, intellectual property, and manufactured products and services. Technical communicators combine multimedia knowledge and strong communication skills with technical expertise to provide education across the entire spectrum of users' abilities, technical experience, and visual and auditory capabilities. For more information visit www.stc.org/about-stc/defining-technical-communication.

The Society for Technical Communication is the largest association of technical communicators in the world. STC is currently classifying the Body of Knowledge for the field and communicating the value of technical communication. Its volunteer leadership continues to work with government bodies and standards organizations to increase awareness and accurate perception of technical communication. Membership is open to all with an interest in technical communication. Visit the STC Web site (www.stc.org) for details on membership categories, fees, and benefits.

INDEX TO ADVERTISERS

Technical
COMMUNICATION

Journal of the Society for Technical Communication

FEBRUARY 2018

ARTICLES

DEPARTMENTS

ONLINE ONLY
TECHCOMM.STC.ORG

INSTRUCTIONS FOR AUTHORS

About the Journal

Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

- Applied research – reports of practically relevant (empirical or analytical) research
- Applied theory – original contributions to technical communication theory
- Case history – reports on solutions to technical communication problems
- Tutorial – instructions on processes or procedures that respond to new developments, insights, laws, standards, requirements, or technologies
- Bibliography – reviews of relevant research or bibliographic essays

The purpose of Technical Communication is to inform, not impress. Write in a clear, informal style, avoiding jargon and acronyms. Use the first person and active voice. Avoid language that might be considered sexist, and write with the journal's international audience in mind.

Our authority on spelling and usage is The American Heritage Dictionary, 4th edition; on punctuation, format, and citation style, the Publication Manual of the American Psychological Association, 6th edition.

Manuscript Preparation and Submission

Submitting a manuscript to Technical Communication for review and possible publication implies that its submission has been approved by all authors, researchers, and/or organizations involved, that the manuscript (or a substantial portion) has not been published before, and that the manuscript is not under review elsewhere.

When using previously published materials (for example, images or text excerpts), authors are responsible for obtaining the permissions needed to reprint copyrighted materials.

The typical article length is between 5,000 and 8,000 words. Exceptions are possible.

Use up to three levels of headings, and indicate them clearly. Do not number headings of sections and subsections.

FIRST-LEVEL HEADING
(all caps, on a line by itself)

Second-level Heading
(each word capitalized, bold, on a line by itself)

Third-level heading
(first word only capitalized, bold, on a line by itself)

Except for the cover page, remove all identifying information from the manuscript. This includes author names, author affiliations, acknowledgments, and references to work in progress or unpublished manuscripts.

Do not use footnotes. Instead, use author-date citations within the text, and provide a complete list of works cited (labeled "References"). Avoid multiple citations for ideas or approaches unless they demonstrate an evolution in thought or practice.

Check all author-date citations within the text and all entries in the reference list for both accuracy and conformance to the Publication Manual of the American Psychological Association (APA), pp. 169–224.

Submit your manuscript as a double-spaced electronic file with one-inch margins. Do not attempt to mimic the format or layout of a published article. Keep the layout as clean and simple as possible.

Microsoft Word files are preferred. If you use another word processor, a Rich Text Format (RTF) file is also acceptable. Organize your manuscript as follows:

- Page 1: Cover page – Title of the manuscript, a running head, and the names, affiliations, and contact info of all authors
- Page 2: Structured abstract – A summary of the article (maximum 250 words), using the headings "Purpose," "Method," "Results," and "Conclusion"
- Page 3: Up to five keywords and a practitioner's takeaway (maximum 100 words) displayed as a bulleted list summarizing the practical implications of the article
- Page 4: Start of the manuscript
- References
- Tables and figures – Start each table or figure on a new page. Assign each table and figure a number and title. If a manuscript is accepted for publication, provide high-resolution images.

Send the manuscript as an attachment to an e-mail message to the editor-in-chief, Sam Dragga (e-mail: tceditor@stc.org).

Review Process

The editor-in-chief will read your manuscript and check its potential suitability for the journal. In the case of a positive outcome, the manuscript will be sent to three independent referees for a double-masked review. On the basis of the referees' recommendations, the editor will send you a decision about the manuscript: accept, accept with revisions, revise and resubmit, or reject. The review criteria are listed at www.stc.org/techcomm/instructions-for-authors/.

Copyrights

The Society for Technical Communication requires that authors transfer copyrights to STC for articles appearing in Technical Communication and grant STC permission to post the articles on Technical Communication Online for an indefinite period. STC will grant colleges, universities, and libraries the right to use the articles free of charge for educational purposes.

Determining the Impact of Research

How do we determine the impact of research? I almost used the word *measure*, but that would imply and privilege a quantitative standard of success. Although calculations of impact are more and more ubiquitous in journal publication, I think we are wise to recognize their limits and give equal or greater weight to qualitative judgments of influence.

Note that a variety of formulas for calculating "impact" are available:

- Impact Factor – measures the impact of a journal on a field by looking at how many articles it publishes in a two-year period that could be cited and using this figure to divide the number of citations of these articles in following years. This measures the journal's impact instead of the impact of individual articles, but it is assumed that high impact journals are more likely to publish high impact articles.
- H-index – measures a given author's impact on a field by looking at the author's most frequently cited articles and finding the number of times these articles are cited by other scholars in their publications. This measure again offers indirect evidence of the influence of individual articles, as it is assumed that high impact authors are more likely to publish high impact articles.

- Citation Analysis – measures the impact of a given article by looking at the number of times it is cited by other scholars in their publications. The results of a citation search will differ according to the database it uses (e.g., Web of Science versus Google Scholar).
- Views/Downloads – measures the impact of a given article according to the number of times it is viewed or downloaded. This assumes that accessing of the article is itself evidence of its influence. It privileges the research decisions of scholars who have access to the journals in question as well as journals that allow unlimited access to their articles.
- Social Media References – measures the impact of a given article according to the number of times it has been cited, discussed, liked, or shared through social media. This calculation may be qualified by giving greater weight to influential sources (e.g., prominent scholars) but assumes active participation in social media, thus privileging scholars with unrestricted/unfiltered access.

Although the several metrics regarding impact are impressive in their perceived objectivity and could have merit for comparative purposes, we also must recognize

that each is a portrait of impact built on incomplete records of citations (either formal or informal) as well as inconsistent and inadequate evidence of influence.

I have cited scores of articles through the years that were passing contributions to the field but were pertinent to the manuscript I was writing at the time. Meanwhile, I have also read a lot of journal articles that have influenced my teaching and research—the way I think about the field—but that I have never considered necessary to cite in my articles and books, because their impact was indirect and abiding instead of direct and immediate.

For example, Kathleen Durack's "Patterns for Success: A Lesson in Usable Design from U.S. Patent Records" (*Technical Communication*, 1997, pp. 37–51) changed my vision of the field of technical communication, encouraging the analysis of a wider variety of artifacts as technical communication. I have, however, never been given cause to cite this article in my research projects. Neither have I cited Saul Carliner's "Modeling Information for Three-dimensional Space: Lessons Learned from Museum Exhibit Design" (*Technical Communication*, 2003, pp. 554–570), though I know it has

immensely influenced my thinking on usability, accessibility, and information design.

I would imagine that each of us could point to important articles of persistent influence, articles that we have appreciated—and might have praised in e-mail messages, in office conversations, in classroom discussions—articles that have inspired us and guided us but that we have never cited in subsequent studies, or downloaded, or mentioned in publicly available digital spaces.

For example, at my invitation, all of the authors in this issue of the journal discussed the major influences on their research projects. Their explanations make clear that *impact* resists simple definition or numerical scoring.

"A One-Hundred Forty Character Discourse: The Twitter Apology as an Emerging Sub-Genre of Corporate Communication," by Allen Berry, analyzes 40 corporate apologies issued through Twitter to determine the rhetorical techniques contributing to their success or failure. The analysis focuses on offensive corporate activity that has been identified and discussed on Twitter and discovers that effective apologies by the guilty parties almost always recognize the error or injury and express remorse, usually acknowledge responsibility, often propose to make restitution, and sometimes specifically promise to avoid repetition of the wrongdoing. Vivid with examples, the analysis also makes clear that sensitivity to Twitter's wide international audience as well as swift and immediate action are essential to this new articulation of apologetic rhetoric.

Allen's project started with his readings in a post-doctoral independent study on the subject of social media and conversations with his professor and mentor, Dr. Ryan Weber. Allen readily identifies the research of highest impact:

> When I think of the literature that bore the greatest influence on the article, there are two that immediately come to mind. Mainly, John Kador's book on apology strategies, *Effective Apology: Mending Fences, Building Bridges, and Restoring Trust* (2009). It was simple and elegant, and it put the strategy in words that were easy to understand and embrace. He offered examples ranging from corporate apologies to an apology on the part of the United States Military to a group of Muslim clerics after a group of soldiers used a copy of the Koran for target practice. In addition, Ruth Page's article, "Saying 'sorry': Corporate Apologies Posted on Twitter" (2014), was interesting to me. Her information was very similar to Kador's, but Page was more scholarly and scientific in her approach. Her identification of the actual apology as an Illocutionary Force Indicating Device was very helpful in clarifying that an apology is an overt act. Her article framed the apology as something interactive and viable that requires effort on the part of the offender.

Allen cites 40 sources in his article, but the impact of Kador (2009) and Page (2014) differs obviously from the influence of the remaining 38. He mentions Kador 37 times in the article and Page 14 times, but Allen's words here give us genuine insight on their relative impact.

"The Burden of Ambiguity: Writing at a Cooperative," by Avery Edenfield, reports on the language practices of a democratically organized business in a two-year study that involves interviews, observations, and analysis of a wide array of written artifacts (e.g., e-mail messages, handbooks, inventory lists, screen shots). This multi-layered examination reveals how ambiguous language operates positively and negatively within this organization: For example, ambiguity in job descriptions creates confusion and paralysis, whereas ambiguity in the bylaws of the organization allow it critical agility during a financial crisis. Ambiguities also must be interpreted, negotiated, and navigated, thus constituting a cost of time and energy for the organization that must be weighed and justified.

Avery explains the influence of earlier studies on this project:

> Some of the works that inspired me to think closely on the intersections of writing and power are Carolyn Miller's "Genre as Social Action" (1984), Bernadette Longo's *Spurious Coin* (2000*),* and Dorothy Winsor's *Writing Power* (2003), just to name a few. The works that guided me on thinking about democratic organizations and research

Sam Dragga, Editor

are all over the place, but I particularly was inspired by Francesca Polletta's *Freedom is an Endless Meeting: Democracy in American Social Movements* (2002), George Cheney's "Democracy in the Workplace: Theory and Practice from the Perspective of Communication" (2009), Jo Freeman's "The Tyranny of Structurelessness" (1972), and Teresa Harrison's "Communication and Interdependence in Democratic Organizations" (1994). Also, as of late, I've drawn inspiration from notable TPC articles on social justice, like Natasha Jones's "Technical Communicator as Advocate" (2016) and "Disrupting the Past to Disrupt the Future: An Antenarrative of Technical Communication" (2016) by Natasha Jones, Kristen Moore, and Rebecca Walton.

Neither Polletta's book nor Freeman's article—two of the nine key influences that Avery identifies—are cited in the article. As I noted earlier, a list of citations is incomplete and insufficient evidence of impact.

"Interactivity in an Age of Immersive Media: Seven Dimensions for Wearable Technology, Internet of Things, and Technical Communication," by Jason Tham, offers a review of the existing research on interactivity, applies the resulting insights to immersive environments, and proposes guidelines for technical communicators engaged in immersive experience design. This study finds effective

interactivity is contingent on the attention given to seven issues (i.e., reciprocity, synchronicity, connectedness, navigability, user control, entertainment, and sensory stimulation). It also encourages technical communicators to focus their efforts on assuring seamless connections for versatility and compatibility of devices, optimizing user control and customization, developing context-sensitive and anticipatory user assistance, and fortifying the immersive experience with more tactile interactions.

While Jason lists 88 sources of information in his article, he mentions three key influences on his thinking about the project, only two of which he cites in the article:

I started researching mediated interactivity in a master's seminar on media convergence in 2013. A resource I found most useful was *The New Media Theory Reader*, edited by Robert Hassan and Julian Thomas (2006). However, while I found that the conversations around the development of interactive technologies are rich in computer science, mass communication, and psychology, resources were scarce for technical communication practitioners. Further study has brought me to two landmark articles in *Technical Communication* that I cite as motivation for this publication—Andrisani et al. (2001) and McDaniel (2009)—which have given me exigence to update the literature on interactivity for technical communication purposes.

To anchor my discussion of new interactivity features and dimensions, I ledged onto wearable technologies and the Internet of Things, both emerging technologies that I have been using and investigating since my PhD program.

"Toward Understanding Important Workplace Issues for Technical Communicators," by Clinton R. Lanier, reports on a survey of practicing technical communicators regarding their perceptions of the key changes in the field that have occurred in the last five years, from adoption of new responsibilities and technologies to adaptation of existing theories and techniques. While the principles of clear communication are still a solid foundation, the survey uncovers evidence of a transformation in the field, especially in the shift to responsive design of multimedia information for mobile devices. This finding itself might be unsurprising, but the survey proves that it is a change neither isolated nor radical but of impressive scope and intensity.

According to Clint, his research project was driven by a sense of obligation to his students and informed by a wide array of resources but especially a 2015 article in *Technical Communication*:

I believe that it's the duty of a technical communication instructor to stay informed about the workplace their students will be entering. Unfortunately, that's not always easy to do. Even with

all the great articles that have been published in the past few years, I felt that I still needed a better understanding of what TC professionals cared about, worried about, or felt was important. Eva Brumberger and Claire Lauer's "Technical Communication as User Experience in a Broadening Industry Landscape" was particularly important. I published a similar article in 2009 and really appreciated their updated information, but it also made me realize nobody had attempted to reach a large pool of actual practitioners, and that's what I tried to do next. Luckily, social media presents a great platform for reaching these professionals, and I was able to get the opinions of technical communicators from a wide range of backgrounds, training, and professions, and found a wealth of surprising points, including that many of the tools, skills, and concepts I used as a technical writer back in the early 2000s were still considered important and necessary to know.

"An Integrative Literature Review of Project Management in Technical and Professional Communication," by Benjamin Lauren and Joanna Schreiber, analyzes 128 published materials (chiefly articles in journals and magazines) on the subject of project management in order to determine how project management is described as a practice as well as which theories of communication it studies and which methods or strategies it adopts. The analysis finds that project management is typically perceived as a generic skill instead of a rhetorically sensitive practice that is continuously adapting to each organization and the individuals involved in each project. Important opportunities for critical studies of project management are thus available to technical communicators, and Ben and Joanna seize a salient opportunity by guest editing the forthcoming May 2018 issue of *Technical Communication* on Project Management.

Ben and Joanna acknowledge the several key influences that guided their thinking:

When we first started talking about the project, there were at least three things we were thinking about. The first was Stan Dicks' observation in "How Can Technical Communicators Manage Projects?" (2013) that very little scholarship has been dedicated to the topic of project management even though it is essential to technical communication as a field. We immediately wondered, "Well, what *has* been published?" We had also read Rebekka Andersen's and Tatiana Batova's "The Current State of Component Content Management: An Integrative Literature Review" (2015) and were really inspired. They managed to bring together so many different voices into conversation and across what are usually relatively siloed groups. Third, after the annual conference of the Association of Teachers of Technical Writing in 2015, we had a good discussion about how studies of project management would be enriched if we could put academic and industry voices into conversation. This is partly because we came to see that project management methodologies influence the kinds of workplace experiences that technical communicators both participate in and must shape for others. We were also surprised by many of the existing publications on project management. We did not expect the focus on processes and tools instead of critical discussions or reflections on how project management processes and tools are designed systems that determine how we collaborate and participate at work. We felt earlier studies (e.g., Jimmie Killingsworth & Betsy Jones, "Division of labor or integrated teams: A crux in the management of technical communication?," *Technical Communication*, 1989) had made this point pretty clearly, but it somehow became less present in more recent publications.

The impact of research, however, is never a judgment made exclusively by the readers using the research. The authors of articles also contribute to the determination of their impact by setting the standards of success.

For example, Allen hopes his article on Twitter apologies will encourage corporations to

adopt more effective practices in crisis communication:

> The standard operating procedure for dealing with a public scandal calls for the offender to take no responsibility for the offense and attempt to telegraph culpability onto another party, including but not limited to the offended. I hope that my article serves to inform social media managers and others about how to better manage Twitter scandals. While it is virtually impossible to mend the damage with every Twitter user, the damage to a company's reputation can be reduced, and their reputation even bolstered if the crisis is handled correctly. If the effort is made and made properly, even audiences as diverse and jaded as the exponential Twitter audience are willing to forgive those who offer a sincere apology for their offenses. I hope that this article will thus enhance crisis management strategies. There is an effective strategy for handling a social media apology, and given the results of my study, I hope that corporations will change the old strategy of denying all responsibility in favor of the more elegant strategy described in my article.

Avery believes that his article might encourage a more judicious evaluation of ambiguity's positive and negative traits in technical communication, a position he arrived at while working on this project:

The first draft of this article examined a variety of genres and their social effects within a cooperative that I had studied. In the initial draft, I argued their documents designated roles and allowed for reporting of violations, but ambiguity undermined many of the documents. Over time, I saw this last feature of ambiguity as a more important piece of the puzzle. When I set out to write the second draft, I didn't anticipate finding ambiguity to be a positive feature. That was a real surprise to me. It's easy to assume that clarity and objectivity are always essential elements to effective communication, especially in regulatory documents. However, my analysis pointed to a situation where that was not the case. In the final version of the manuscript, I argue democratic organizations must carefully consider the positive and negative consequences of ambiguity, and that this consideration should extend to regulatory documents where clarity is often an assumed objective.

Jason hopes that his article about immersive media will change design practice as well as teaching:

> As I continue to pursue questions and solutions related to user experience and technological development in these emerging technologies, I see great potential for their deployment in education and training, professional practice,

and service to the public. Thus, I continue to advocate for critical investigations of these technologies across personal, social, professional, and civic contexts. Ideally, I would like designers and developers to use the dimensions I have devised as guiding principles for devising their own manifestos in technology design. I hope that in every design decision they make they would return to these dimensions and consider the impact on users. For teachers and scholars, I hope to demonstrate how our scholarship can shape future technological actions.

Clint believes his article on workplace practices will lead to a better sense of the field by instructors and their students as well as by practitioners:

> I think ultimately this study and the associated findings will really help me and other instructors better educate and prepare students. As for practitioners, I think it will help them understand the direction of the discipline and how their own workplace connects to other professional organizations.

And Ben and Joanna hope their article will generate more studies of project management:

> We hope that our article will motivate technical communication to take up critical discussions of project

management processes and tools. The scholarship shows we tend to rely on existing processes and tools without interrogating how useful or inclusive they are. A good example is the widespread adoption of Agile, Lean, Design Thinking, and so on. These are development methodologies, yes, but they also dictate how we manage projects and influence the very experiences we produce. While we found that industry thought-leaders often don't hesitate to adapt project management methodologies to different contexts and situations, that practice does not seem as evident in classroom instruction. We see room for technical communicators in those discussions, offering rhetorical concepts as a way to critically adapt or develop project management methodologies for organizations and teams. This project made us realize how much work is left to be done in project management, and we believe there is a real opportunity for technical communication as a field to participate in these conversations.

While *Technical Communication* enjoys high impact scores (e.g., Impact Factor of 2.1 in 2016), we must also compile the declarations of authors and the tributes of readers if we are to know the genuine influence of the articles that it publishes. This collaborative effort would give us more compelling information about impact and would certainly be more interesting reading.

And, thus, my questions: Which of *TC*'s articles stick in your mind? Which have changed your thinking? Influenced your practice? Guided your teaching? Inspired your research?

On the Cover

For my design submission on changing standards in grammar and punctuation, I crafted a flat map landscape using simple shapes. I then created four icons to represent different eras of written communication and punctuation: the written word represented by parchment and quill, a wooden typeset as representative of our transition to print, a typewriter, and finally a computer. Each icon was placed at a different point on the map, with the road continuing off-screen to represent the changes and innovations yet to come. The visual hierarchy is complemented and guided by the road, drawing the audience along the progression of communication.

About the Artist

Stacha Yundt is a graduate student in the McMicken College of Arts and Sciences with the University of Cincinnati. She is pursuing a Master's degree in Professional Writing. The degree blends writing with design, and Stacha's focus is on marketing and promotional content. When she isn't working, Stacha enjoys spending as much time as possible outdoors. She can be reached at hofsm@mail.uc.edu.

20-23 MAY 2018

Orlando, Florida

Register Now

65TH ANNUAL
Technical Communication Summit

Honorable Mention
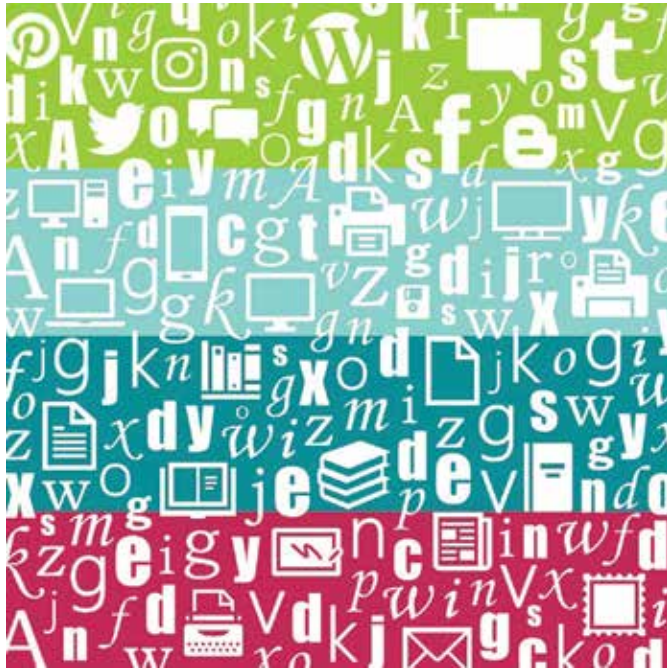
For the February 2018 cover illustration of *Technical Communication*, I wanted to visually depict how the evolution of technology has played a role in changing the standards of grammar and punctuation. The main components of the image are the numerous letters cascading across the image. The different typefaces represent the various dialects and flavors of the spoken language. Also across the image are several icons placed in a seemingly random yet deliberate order. Starting from the bottom, the images depict the beginning writing tools used to instill grammar and punctuation: a chalkboard, a letter, a newspaper, a stamp, and a typewriter. The next step in writing is depicted using the various forms of paper and books which allowed for the distribution of writing and, in turn, the spread of grammar. The third stage introduces technology and computers, which changed how grammar played a role in the digital age. Lastly, the top of the image includes icons of several popular social media tools that have revolutionized writing and show how grammar has changed to fit the new forums. With every new written and technological evolution, the standards of grammar and punctuation have changed to adapt to the times.

A One-Hundred Forty Character Discourse: The Twitter Apology as an Emerging Sub-Genre of Corporate Communication

Allen Berry

Abstract

Purpose: In the emerging world of social media, social media platforms have offered a number of marketing opportunities but also a number of potential problems. This has led to a number of social media foibles that can create a public relations nightmare for the affected companies. This article will explore the emerging phenomenon of the corporate Twitter apology and the rhetorical constructs that are required for an effective apology.

Method: Using the strategies of Ruth Page and John Kador, I have analyzed successful and unsuccessful Twitter apologies. The success of these apologies is determined by the public response from the tertiary audiences comprised of Twitter followers.

Results: This study determined that successful Twitter apologies use a combination of Kador's strategies (Recognition, Responsibility, Remorse, Restitution, and Repetition), originally implemented for analog apologies, adapted for electronic communications to make a successful social media apology.

Conclusion: Surviving any serious social media foible depends upon issuing a successful apology and doing so on the social media platform where the original offense took place. Social media mistakes, though unique in their scope and potential to reach an ever-expanding tertiary audience, can be managed using the same strategies that apply to analog apologies.

Practitioner's Takeaway:

- The emergence of Twitter has opened many opportunities for businesses to raise their public profiles.
- An unfortunate by-product of social media platforms is the possibility for their misuse, resulting in a public relations disaster.
- There is an emerging rhetorical genre of Twitter apologies wherein a corporate authority must make amends for the company's unfortunate tweet.
- The Twitter apology has the potential to either undo the damage of the initial tweet or repair the damage, and improve the company's standing in the public view so long as the social media representative utilizes the strategies of Recognition, Responsibility, Remorse, Restitution, and Repetition.

Corporate Twitter Apologies

The universal presence of social media has created a number of new and interesting rhetorical situations, in both the realm of social strata and in the corporate world. Customers no longer need send a strongly worded letter to the physical offices of an offending corporation and wait an indeterminate amount of time for a reply. In the high-speed environment of social media, customers can now voice their concerns immediately via the company's Twitter feed.

Conversely, this new media has also become a forum for quick, concise communication between corporations and consumers. This instant access medium where messages can be transmitted instantly, often without regulation, has been beneficial to companies. Businesses' Twitter presence, as innovators in touch with both consumers and cutting-edge technology, can boost a company's image. However, Twitter has additionally spawned an unintended consequence as a public relations hazard. This is due to the size of the tertiary audience of social media, which consists of the audience members that the tweets were never intended for. The tertiary audience pitfall has become seemingly unavoidable in the expanding world of social media. As a result, a strategy has begun to emerge for managing the conflicts that inevitably come as a result of misusing social media. This article will explore the phenomenon of the social media apology and how to properly navigate the potential public image disaster that can come as a result of a controversial tweet. Utilizing established strategies for corporate apologies and a sampling of controversial Twitter incidents, I will address best practices for managing the fallout from social media incidents. Particular emphasis will be placed on John Kador's "Five R's" strategy for effective apologies; recognition, responsibility, remorse, restitution, and repetition; as applied to social media incidents.

Marwick and Boyd, in their 2011 study of social media behavior, suggest that Twitter differs from email in that email is directed to a specific audience. Twitter differs in that a tweet reaches a broad audience. The authors suggest that

> [Twittter] users write different tweets to target different people (e.g. audiences). This approach acknowledges multiplicity, but rather than creating entirely separate, discrete audiences through a single account, conscious of potential overlap among their audiences. However, the difference between

Twitter and email is that the latter is primarily a directed technology with people pushing content to the persons listed in the 'To' field, while tweets are made available for interested individuals to pull on demand. (p. 120)

They go on to suggest that the ideal reader, as imagined by most writers, still exists in the social media realm, and that Twitter users write their tweets with these readers in mind. This imagined audience of presumably like-minded individuals is a particularly perilous one for a corporation, considering the wide audience of Twitter followers (see the Digiorno Pizza incident).

Given the relatively personal nature of social media, a Twitter account can represent the personal views and opinions of the user, and this is typically the case for individual accounts utilized by a single user. In this respect, the Twitter user is the gatekeeper of the content that he or she views or interacts with. Most social media platforms offer controls over what information is shared with others. Filters and user controls allow the social media user to decide who can read and post to their social media accounts. This factors in to the performance aspect of social media, where the user's image is presented in various degrees of authenticity to the world at large. In essence, the Twitter account represents the person who uses the account. Marwick and Boyd (2011) suggest that this creates a measure of tension that

> usually errs on the side of concealing on Twitter, but even users who do not post anything scandalous must formulate tweets and choose discussion topics based on imagined audience judgment. This consciousness implies an ongoing frontstage performance that balances the desire to maintain positive impressions with the need to seem true or authentic to others. (p. 124)

They further discuss the fact that Twitter users self-censor in order to avoid conflict while simultaneously posting personal information in their tweets designed for a particular audience. They point out that users constantly change their presentations based on their audiences and that "context collapse problematizes the individual's ability to shift between these selves and come off as authentic or fake" (Marwick & Boyd, 2011, p. 124). In the context of the corporate Twitter account, the problem of concealing and revealing is even more

complex. There is no physical presence or personality associated with the corporate account; at the same time, the account must be maintained by a human being. The difficulty occurs when this maintainer's personal interests and perspectives differ from the company's. On occasion, human users will accidentally tweet something that is contrary to the company's views or, in some cases, purposely tweet a personal perspective that goes against company standards.

Consider the following disastrous examples of poor usage of social media. In 2016, the Twitter account of the National Republican Senate Committee (NRSC) issued a particularly unfortunate tweet regarding Senate Candidate Tammy Duckworth. The NRSC issued a tweet stating "Tammy Duckworth has a sad history of not standing up for our veterans. #ILSen bit. ly/24OLQTF" (Enterpreneur.com). What might appear on the surface to be the typical rhetoric of a contentious political season is grossly inappropriate in light of the fact that (now Senator) Duckworth lost both legs while serving in Iraq. Furthermore, she served as an assistant secretary for the Veteran's Administration upon her return home.

Figure 1. Ill-informed tweet attacking double amputee Iraq War Vet Tammy Duckworth for "not standing up for our veterans."

Occasionally, the Twitter foible can be an ill-conceived marketing strategy, like the recent Twitter ad by the team at The International House of Pancakes (IHOP). IHOP's Twitter feed is typically filled with visual humor and pop culture references presumably crafted to get quick laughs while advertising their products. A November 2015 Red Velvet Pancakes Photo tweet sported the caption "What is this? Velvet?" referring to a line from Eddie Murphy's film "Coming to America." The strategy is typically effective; however, it backfired in March of that same year. IHOP tweeted a pair of photographs of their pancakes with accompanying captions, using some decidedly insensitive slang referring to women. The first read "The butterface we all know and love." The term "butter face" denotes a woman with a particularly appealing figure but a less appealing face. A second caption read, "flat but has a GREAT personality" (@IHOP). This caption is something of a double entendre, referring to the size of a woman's breasts. These tweets quickly raised the ire of IHOP's Twitter followers and others.

Figure 2. IHOP's misogynistic tweets. The caption refers to the slang term "Butterface," which suggests a woman's attractive physique but unattractive body, and the other suggesting a woman with a flat chest but a great personality.

The case of Justine Sacco, former Public Relations Director of InterActiveCorp, the parent company of Match.com and LinkedIn.com among others, provides a strong cautionary tale on the reach and potential hazards of social media. Prior to departing on a trip to Africa, Sacco issued the following ill-conceived

Corporate Twitter Apologies

tweet: "Going to Africa. Hope I don't get AIDS. Just kidding. I'm white!" (as cited in Dimitrova, 2013, para. 2). Unknown to Sacco, who was in transit and without Internet access, the reaction to her post was immediate. According to an ABC News report, "A trending hashtag #HasJustineLandedYet and a parody account @LOLJustineSacco quickly appeared on Twitter. A fake Facebook account under her name was also created, where a post links to www.justinesacco. com, which brings up a donation page for Aid for Africa" (Dimitrova, 2013, para. 6). The company issued a statement distancing itself from Sacco, who was fired the day after her initial post. The offensive tweet was costly for Sacco but a potential public relations disaster for the companies that she represented. Another example of a Twitter disaster is that of the Chrysler employee who inadvertently tweeted from the corporate account, "I find it ironic that Detroit is known as the #motorcity and yet no one here knows how to fucking drive" (Altman, 2012). The Twittersphere, despite being an asset to corporate marketing and public relations, carries the constant risk of a potential disaster. The broader audience of social media is far reaching and practically immeasurable.

The expansion of social media allows for corporations to expand into new and previously unavailable markets, which creates the potential for reaching an audience numbering well into the hundreds of thousands. An example of the power of social media as a far-reaching communication platform is suggested by Ann Gentle, who describes utilizing Twitter to locate "a pair of Mario Jibbitz for Crocs shoes. I had two responses pointing me to sources for the item by the end of the day from different parts of the world" (Gentle, 2013, p. 255). The audience for tweets is both far-reaching and unpredictable, and, given the global scale of the software platform's reach, Twitter's pitfalls can potentially surpass its utility as a marketing tool.

Literature Review

Alice Marwick and Danah Boyd's (2011) article "I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience" explains the difficulties associated with navigating the Twitter audience and its juxtaposition to the user's identity. Their article is significant because of their work with context collapse, which, simply stated, is the infinite

audience of a social media post. When a social media post is created, it can quickly expand beyond the original audience. This becomes even more complicated for corporations where the company's public image on social media is essentially everything. A corporation relies on a human social media representative who has perspectives of his or her own that may differ from the corporation's. This sometimes leads to problems when the representative offers his/her perspective instead of the company's. Marwick and Boyd's (2011) article is of crucial importance in understanding the roles of identity and context in social media communications.

David Bauman's (2011) article on crisis management, "Ethical Approaches to Crisis Leadership," offers a series of successful strategies for managing the damage caused—either intentionally or unintentionally—by a corporation. Bauman offers a leaner strategy than Kador's (2009) for making amends for corporate wrongs, suggesting a three-step process: Acknowledge, Apologize, and Act. These ethical dimensions suggested by Bauman will offer further insight into the success or failure of Twitter apology strategies.

William Benoit's (1997) discussion of corporate strategies suggests that a corporation's wrongdoing is less important in the final analysis than the public's perception of their wrongdoing. Benoit suggests that if there is a corporate scandal, the actual truth is less important than the way that the corporation reacts to it. Benoit's list of corporate strategies will serve as a counterpoint to the work of Kador and a means of establishing an effective strategy for the Twitter apology.

Keith Hearit's (2006) text about corporate responses to allegations of wrongdoing provides insight into the nature of a corporation's persona and the public's perception of it in times of a public relations crisis. He argues that a corporation's public image becomes, for all practical purposes, an entity. Although corporations are not individuals, they come to be seen as such through their public actions and their public media. Given this phenomenon, where a corporation can be reduced to a defacto person, the company is then subject to the same scrutiny and disdain as an individual. This article explains how quickly a Twitter foible can become a publicity crisis.

Additionally, the work of Kim, Sung, and Kang discusses Twitter and, specifically, the phenomenon of retweeting, which they describe as "electronic word of mouth" (p. 19). This phenomenon is important

Allen Berry

because of the article's focus on tertiary audiences. These audiences consist of readers for whom the original message was never intended, such as news media. This phenomenon is also explored through Web sources, such as Greg Beaubien's Public Relations blog. He discusses how electronic sources, either republish and comment on particularly scandalous Twitter foibles, or discuss the fallout that comes as a result of them. Beaubien's (2014) article talks about the structure of corporate apologies and how they express regret while stopping short of taking responsibility for the actual offense.

Although not limited to the electronic media aspect of the corporate apology, David Boyd's (2011) model as illustrated by his article, "Art and Artifice in Public Apologies," offers seven aspects of the public apology to Kador's five. Furthermore, Boyd offers binaries for each of the aspects he examines, such as timeliness versus tardiness and empathy versus estrangement. This is particularly crucial when measuring the success of the apology.

Regarding the phenomenon of the Twitter apology, Ruth Page (2014), writing for the *Journal of Pragmatics*, denotes a set of criteria common in corporate Twitter apologies. These rhetorical criteria are determined from a broad sample size, derived from both private and corporate Twitter accounts. Page examines the frequency of occurrences of rhetorical devices peculiar to the apology.

According to Page (2014), an effective apology requires certain components. Chief among these is what she describes as the Illocutionary Force Indicating Device (IFID), which is the actual indication of apology. The IFID is "apology" or "sorry." The components that follow are a means of ameliorating damage to the company's reputation.

Explanations, Page (2014) points out, are less frequent in corporate apologies due to their potential to be either face saving or face damaging. Alternately, the company may attempt to evade responsibility by shifting blame to a third party who is associated with the company, as was the case with the unfortunate Home Depot tweet that featured two African American employees with a third employee in a gorilla costume. The photo was accompanied by the caption "Which of these drummers is not like the others?"

The evasion strategy is employed to mitigate any potential reputation damage that may come as a consequence of the explanation. Home Depot utilized

Figure 3. Home Depot's racist tweet scandal. Via Socialnews-daily.com. The photo depicts two African American men and a man in a gorilla mask the caption reads "Which drummer is not like the others?"

the evasion strategy by tweeting that they had fired the agency who posted the offending tweet, thus shifting blame from themselves to their agency.

The offer of repair is a means by which the corporation may attempt to repair any potential damage by offering a remedy to the situation. Page (2014) points out that this strategy is applied at a 20% higher rate with corporations than their non-corporate Twitter counterparts. This component typically offers some tangible commodity as compensation for the offense; this can take on the form of a credit, a replacement of goods, or a refund.

Finally, Page (2014) suggests following up the initial apology by asking the offended party for more information. This accompanies the apology and is meant to restore the relationship with the customer. The structure of these information request tweets typically requires action on the part of one of the

Corporate Twitter Apologies

participants (either the customer or the company). They are intended to get the two parties communicating and repair the relationship between customer and company by expressing regret for the offense and reassuring the offended party that the offense will not happen again.

These apology criteria are similar in structure to those offered by John Kador (2009) in his book on effective apologies. While Kador's book focuses on apologies rendered in the physical world as opposed to the cyber world, the rhetorical strategies are quite similar. Using Kador's book as a lens for this study is due to his broader approach to the apology. Using Kador's strategy as it applies to user experience makes his work an ideal lens to examine the corporate Twitter apology.

Kador (2009) lists five criteria for effective apologies: **Recognition, Responsibility, Remorse, Restitution,** and **Repetition,** which he refers to as "the Five Rs." Recognition is, in principle, similar to Page's (2014) IFID but is somewhat more complex in that it is the first element of the apology. Kador breaks down the apology strategy further into component parts of the illocutionary force indicating device. The recognition component dictates that the offending party acknowledges that harm has been caused. The move toward restitution cannot begin until this first crucial move has been made.

The **responsibility** component suggests that the offender acknowledges wrongdoing to the offended (and to the public depending on the size of the offense) that they have committed a wrong. This component of the apology begins the crucial business of repairing the damage done. Responsibility, according to Kador (2009), is a measure of integrity wherein the apologizer must admit sole culpability for the offense.

Remorse requires that the offender expresses regret for the offense and any damage that it has caused. This is similar in scope to Page's (2014) IFID in that Kador (2009) suggests that without the actual phrase "I apologize" or "I'm sorry," no effective apology can take place. He further states that there is no equivalent expression with which to communicate the apology. Remorse suggests regret for the offense and that the offender will not willingly repeat it.

The **restitution** component of the apology is the proactive effort on the part of the offender to repair the damage done by offering some means of compensation for the act. This is important in that it makes the relationship whole again, contains a sacrifice on the

part of the offender, and communicates the importance of repairing the relationship to the offended party. Without the sincere offer of restitution, the relationship cannot be repaired.

Finally, **repetition** is the means by which the offender assures the offended that the initial harm will not be repeated. Kador (2009) suggests that the absence of this step causes otherwise appropriate apologies to lose their potency. With the repetition component of the apology, the relationship can move forward, because the fear and suspicion of being victimized again are alleviated.

Managing Consumer Conflicts Via Twitter

The ready availability of social media with its immediate and easy access allows for customers to air their grievances in a nearly immediate fashion, and, if the consumer has a large social media following, news of the offense can go viral in a matter of hours or perhaps even minutes. This complicates Kador's (2009) 5 R's strategy, which requires that the person making the apology determine to whom he or she should apologize. On the surface, the solution might seem obvious: apologize to the offended party. However, when applied to the far-reaching technology of social media, deciding to whom to apologize becomes a bit more difficult. After all, the scope of those who are offended by such a public foible is only limited to the number of people who have access to Twitter. In addition to the initial consumers, there is the secondary audience of consumers who read the offending tweet once it is retweeted by friends and by outlets that monitor social media trends.

Kietzmann, Hermkens, McCarthy, and Silvestre (2011), in their article on the ecology of social media, refer to theories of stable social interaction in both the physical and cyber worlds. They hypothesize that social media has altered the old model by expanding the potential number of possible relationships that users can maintain. According to them:

> A widely discussed group relationship metric is Dunbar's Number, proposed by anthropologist Robin Dunbar (1992), who theorized that people have a cognitive limit which restricts the number of stable social relationships they can have with other people to about 150. Social media platforms

have recognized that many communities grow well beyond this number, and offer tools that allow users to manage membership. (p. 243)

The rise of Twitter and other social media has made it possible for users to expand their group of friends beyond their local community. A once relatively manageable body of friends with common interests becomes a multitude of individuals with various levels of interaction and emotional proximity to the social media user. The Original Poster (OP) may, and likely does, have numerous followers he or she has never met or interacted with outside of social media. Twitter users, be they corporate or private, may have followers numbering in the hundreds or even thousands. These followers' tangential relationship to the user is typically unreciprocated, and yet they enjoy some measure of emotional attachment to the Twitter users they follow. These mostly anonymous individuals are known only by a screen name to the Twitter users they follow—if they are recognized at all. These followers compose the largest and most difficult to navigate audience of the social media world: the tertiary audience.

The Infinite Tertiary Audience of Twitter

In the realm of social media, there are only the primary and tertiary audiences. Ordinarily, in corporate communication, the message is passed through a series of secondary readers, or gatekeepers, who approve and control the content of the message prior to its distribution. The additional filters provided by gatekeepers (who are oftentimes the social media reps themselves) and secondary readers are either greatly reduced or completely removed due to the near instantaneous nature of social media. Whoever is in charge of the social media account is in direct contact with the audience; the message is filtered only by the Twitter user's discretion. This can lead to trouble when an unfiltered message is sent that damages the company's reputation, and, given the phenomenon of retweeting, the tertiary audience of an ill-conceived tweet is practically infinite.

Robert McEachern, in his 2013 article "Social Media Challenges for Professional Writers," addresses one aspect of this tertiary audience as "watchdog groups." Like all tertiary audiences, these are people to whom the message is not initially intended but who wield some manner of socio-political power. Typically, the watchdog audience

is a small group of people; however, McEachern points out that "with social media writing, nearly everyone with an Internet connection is a potential watchdog audience: texts can easily be sent, reposted, retweeted, or otherwise made available to readers who were not part of the original, focused audience" (p. 281). McEachern offers as proof the example of an incident that occurred following the unfortunate response by an American Cancer Society (ACS) website blogger to a Facebook group calling for a bald Barbie for children with cancer. The blogger stated that, given the relatively rare occurrence of cancer in children, the money potential customers might spend on the doll would be better spent in the form of donations to the ACS. Despite the efforts of the blogger to make amends, removing the offending post and replacing it with an apology, other bloggers re-posted the original entry. As a result, the ACS's Facebook page was inundated with negative comments from family members and supporters of children with cancer. In his analysis of the incident and its aftermath, McEachern states,

> Readers of the ACS blog made other interested parties aware of the ACS blog entry, who made still others aware; eventually, these readers collectively had enough power to influence both the ACS and Mattel. Writing in social media has changed the extent of watchdog audiences exponentially, as more outlets allow for easier exchange. (p. 284)

Naturally, the professional writer and the corporate media specialist must consider the possible implications of the broader audience and its reaction to what the writer posts. However, as demonstrated by the watchdog group phenomenon, the need for caution is far greater in a world where social media is so prevalent in everyday life.

Does The Apology Make A Difference?

According to Keith Hearit, "For corporations, their social personae is their currency their stock in trade. Damage to their carefully constructed personae conceivably will have an effect on thier bottom lines. . . . With public criticism, a previously unadulterated persona has become soiled and the organization's persona has become the issue" (2006, p. 11). In essence, the public image of the company becomes indistinguishable from the company in the minds of

Corporate Twitter Apologies

the public. Hearit states that "Although the personae are synthetic creations, in effect, they become 'a real fiction' (Fisher, 1970, p. 132) because they develop into the vehicle by which individuals experience an organization" (p. 11). This is perhaps most true in the case of corporate Twitter accounts, which users come to view the same as private Twitter users rather than faceless entities. The corporate persona is magnified through the Twitter account, which requires human effort to operate. While social media grants the company a measure of humanity, it also creates the illusion that the corporation itself is a person capable of causing personal offense and harm. This being the case, it is vital that the company act as a person when it has caused harm or offense.

For corporate entities, making an apology can be a particularly risky proposition. There is the common belief that offering an apology carries with it the potential for legal culpability. However, an article by Janet Tovey (2003) in *Technical Communication* states that "A review of formal ('black letter') and common law indicates that apologies generally do not constitute evidence of guilt and that, in fact, they sometimes have positive consequences for the apologist" (p. 420). A proper apology can have the desired restorative effect desired by both the company and the offended party. However, issuing an apology is no guarantee of forgiveness. Restoring trust is especially complicated in the relatively new dimension of social media.

An insensitive or poorly worded tweet can result in a public relations disaster for a corporation; whether or not an apology on the part of the social media representative or the company makes a difference is a matter of some question. Kador (2009) suggests that an effective apology requires the offender to admit wrongdoing, which is at best uncomfortable. An inelegantly crafted response can be just as damaging, if not more so, than the offending tweet.

The importance of taking responsibility is perhaps best demonstrated by *Esquire* magazine's foible of a few years ago. On September 11, 2013, *Esquire* magazine posted the now famous photograph of "the falling man" from September 11, 2001, in the style section of its website. The text accompanying the photograph boasted the following heading: "Making Your Morning Commute More Stylish, How to Look Good on your Way to Work." Once the error was caught, the magazine's media rep took to Twitter with the following dismissive response: "Relax everybody.

There was a stupid technical glitch on our 'Falling Man' story and it was fixed asap. We're sorry for the confusion" (@esquire). The apology offered by *Esquire* does contain the requisite IFID and additionally offers an explanation of the cause for the offense. There is arguably the vague offer of forbearance, but it lacks the element of responsibility. Instead, the *Esquire* apology attempts to deflect the blame from itself by shifting blame to a secondary non-entity: technology. In essence, *Esquire* suggests that there is no one at fault in this blunder and that it is simply a case of bad luck. The most egregious failure of *Esquire's* apology is its condescending tone. Not only does the apology refuse to accept responsibility, in its attempt to downplay the offense, it also condescends to its intended audience and, by doing so, denies any responsibility for the error in the first place. Although it may be impractical, even impossible to engage all aspects of Kador's (2009) and Page's (2014) strategies, some of the key features must be utilized to be rhetorically successful.

Tertiary audiences can be very unforgiving of social media blunders, particularly if the apology is poorly handled. In the age of social media, there are no longer small public relations mistakes. Depending on the number of the account's Twitter followers, a Twitter foible has the potential audience of thousands, and such mistakes are virtually impossible to cover up or erase.

The website Twitlonger, created by Web developer Stuart Gibson, allows users to post messages that can be linked to Twitter and expand beyond the diminutive 140 characters it allows. ESPN Sportscaster Stephen Smith took to Twitlonger to apologize for comments he made about domestic violence in light of the Ray Rice controversy. A portion of the Smith's text reads:

> My series of tweets a short time ago is not an adequate way to capture my thoughts so I am using a single tweet via Twitlonger to more appropriately and effectively clarify my remarks from earlier today about the Ray Rice situation. I completely recognize the sensitivity of the issues and the confusion and disgust that my comments caused. (@stephenasmith)

These incidents, among others, suggest that a large enough social media blunder requires a much larger rhetorical response, wherein one social media's text is addressed on another platform. Responding to a Twitter

failure on another platform; such as Facebook, Blogger, or a company website; does allow for greater space to address the criteria set forth by Kador's (2009) and Page's (2014) writings on effective apologies. However, responding via a different medium means that those who were initially offended may be alienated from the resulting apology. However, an elegantly rendered series of tweets can be equally effective, if not more so than cross-media reparation. Marketing Consultant Tami Wessley of the Weidert Group marketing agency suggests responding first on the platform where the incident first took place. Wessley states,

> If the flare-up happened on Facebook, respond there first—it won't help to jump platforms if the conversation and chaos are happening within another audience. After that initial response, go ahead and expand to other outlets if you believe the situation will "spread," develop a dedicated microsite to house your official response and messages if the situation warrants, and direct anyone interested to that site. (2016, para. 6)

Wessley's strategy suggests that the best platform for addressing a social media crisis is the platform where the trouble initially occurred. Logically speaking, both primary and tertiary audiences will be drawn to the site of the original post and therefore more likely to read any attempts at apologizing the offender might make. This strategy is two-fold in that it may serve to reduce the damage by assuaging those who took offense and prevent the tweet from (to use a bit of Internet slang) "flaming." Second, the aforementioned audiences will likely return to the site of the conflict rather than seek information or redress on the company's other media, such as the corporate website.

Additionally, attempting to apologize across other platforms places the offended party, who is already under duress, in a position where they are responsible for taking action to resolve the offense. According to Ruth Page (2014),

> The directives and requests that require the customer to initiate further interaction are inherently face-threatening, for they place the obligation to pursue reparation with the customer, not with the company. This is a risky strategy, for there is no guarantee that the customer will

continue the interactions, and further good will (and future customers) may be lost. (p. 40)

Though Page's analysis applies to the practice of requesting the customer call for a face-to-face interaction, the principle remains the same. Even tweeting a link to an apology on a separate social media platform or company blog requires further action on the part of the offended parties and carries the same risk of additional damage. The most effective apology restricts making reparations to the platform in which the initial offense occurred. An offensive tweet should be apologized for on Twitter, an offensive Facebook post on Facebook, and so on.

Methods

For the purposes of this study, in September of 2014, I compiled a convenience sample of forty corporate Twitter apologies by entering the terms "Twitter Apology" into Google. These tweets were analyzed on the basis of the five dimensions of effective apologies set forth in John Kador's (2009) book, *Effective Apology: Mending Fences, Building Bridges, and Restoring Trust*. The success of the apologies was rated on the basis of public response via Twitter users. Kador's formula succinctly defines the aspects of an effective apology. Kador's study uses examples from the political world similar to John Edwards' now famous 2008 apology. Conversely, it uses business world examples, like Turner Broadcasting's apology for their ill-conceived flashing Aqua Teen Hunger Force guerilla marketing campaign. Using Kador's "Five R's," as a basis, I examine the tweets' rhetorical construction as well as their social implications. The verbal and rhetorical structure of the individual tweets will be analyzed in terms of the frequency of individual dimensions' occurrence across the sampling of apologetic tweets. Additionally, this article will examine the audience and medium that the individual apologies must address.

Kador's Strategy in Application

Engaging all five of Kador's (2009) strategies is, in most cases, impossible, but some combination of these strategies is necessary to achieve a successful apology. Of the sampling of 40 Twitter apologies, all acceptable apologies demonstrated at least some portion of the

Corporate Twitter Apologies

five criteria. The following graphic demonstrates the percentages of each of Kador's dimensions in relation to the 40 Twitter apologies surveyed:

Table 1. Kador's Strategy applied to tweet sample

Kador's Five Criteria in Relation to Successful Twitter Apologies	
Recognition	97.5 %
Responsibility	57.5 %
Remorse	92.5%
Restitution	37.5 %
Repetition	17.5 %

Recognition

Recognition is the aspect of the apology wherein the offender acknowledges that he or she has hurt someone. In the recognition phase, the offender establishes what he or she is apologizing for, how it affected others, to whom to apologize, and what form the apology should take. Once the offender has established that he/she has done something wrong and that an apology should be issued, only then can the work of the apology begin.

In the sampling of 40 Twitter apologies examined in this paper, 97.5% of the tweets examined acknowledged the offense within the body of the text. For example, one of the more effective Twitter apologies was posted by Julianne Hough apologizing for a controversial Halloween costume: "I am a huge fan of the show *Orange is the New Black*, actress Uzo Aduba, and the character she has created. It certainly was never my intention to be disrespectful or demeaning to anyone in any way. I realize my costume hurt and offended people and I truly apologize" (@juliannehough). Not only does Hough acknowledge the offense but also takes the extra step of explaining that she understands how her actions hurt others, thereby acknowledging the effect her actions had on others.

Additionally, a media rep for KitchenAid engaged the recognition strategy in the company's response to a famously insensitive tweet about the death of President Barack Obama's grandmother. After initially blaming the company's social media rep and assuring followers that the rep had been fired, a spokesman for the company stated, "I would like to personally apologize to President @BarackObama, his family and everyone on Twitter for the offensive Tweet sent earlier" (KitchenAid, 2012). This succinct but effective reply acknowledges that an

offense was committed and further acknowledged who the offended parties were. Although the limitations of the platform do not allow for a lengthy mea culpa, the KitchenAid response fulfills the requirements of recognition by addressing the parties directly and acknowledging that the initial tweet was hurtful.

Responsibility

There is often an attempt on the part of the party making the apology to avoid culpability for the offense, instead casting it in the light of unfortunate circumstance. This is best demonstrated by the shopworn cliché, "mistakes were made," wherein no one accepts responsibility. However, Kador (2009) states in his criteria for effective apologies, "In the responsibility dimension there is a focus on making the apology more about the needs of the victim than about redemption for the offender" (p. 73). The offending party must acknowledge fault for their actions and, in doing so, take full blame for the harm that they have caused. From the samples selected for this paper, only 57.5 % expressed responsibility for the offense in question. There are a number of possible reasons for this reduced number, one of which is the need to save face as suggested by Page's (2014) findings. Referring to an earlier theorist's work on apology strategies, she suggests, "Benoit's strategies for corrective action may include a promise of forbearance, or make an offer of repair to compensate the victim. In contrast, if the apologiser wishes to downplay their role in the perceived offence, they may include explanations which variously deny the offence or evade responsibility" (p. 32). This is evident in the apology by Urban Outfitters for their Kent State sweatshirt, "Urban Outfitters sincerely apologizes for any offense our Vintage Kent State Sweatshirt may have caused. It was never our intention to allude to the tragic events that took place at Kent State in 1970 and we are extremely saddened that this item was perceived as such" (@UrbanOutfitters). Urban Outfitters' apology avoids taking any responsibility for the offense, instead redirecting blame onto those who took offense at the product. This is standard fare according to Benoit's theory. Rather than express mortification directly, Urban Outfitters chose to attempt the "Reducing Offensiveness of Event" strategy, employing a combination of the sub-strategies of minimization and attacking the accuser. This strategy could be employed to great effect in the case of a single known accuser, or a small party of accusers.

Allen Berry

However, the relative anonymity afforded by Twitter makes such strategies, at best, risky. A small group of accusers might be easily contained, even discredited in a real-world incident, but the size of a Twitter audience is unquantifiable and therefore it is impossible to discredit the entire audience.

By refusing to accept fault for their actions, the company garnered the ire of their followers, who retorted via Twitter:
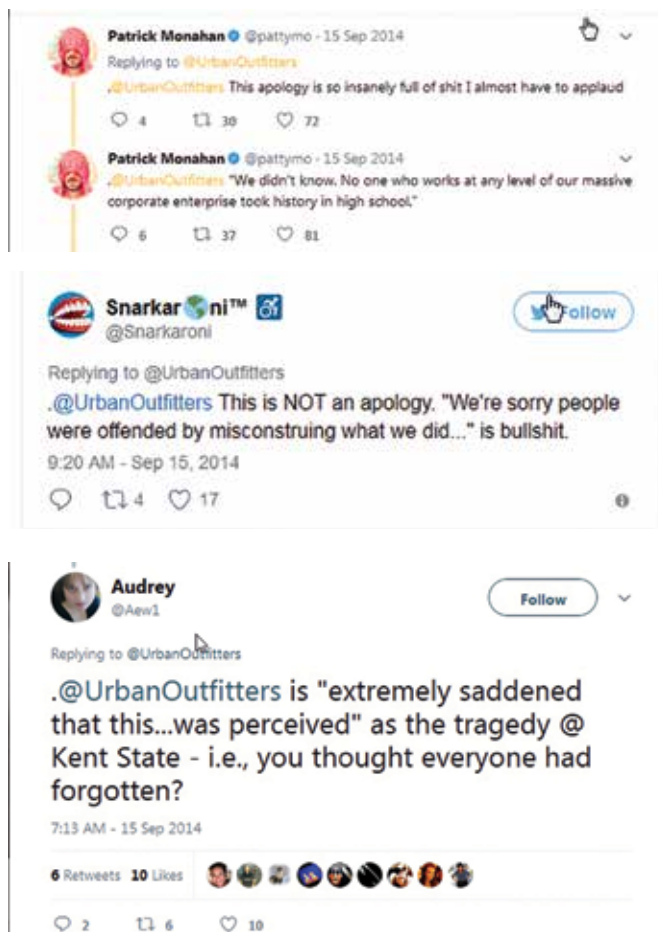
Figure 4. Twitter user backlash against Urban Outfitters, claiming that Urban Outfitters' apology is a non-apology. Courtesy of The Plain Dealer.

Twitter followers responded quickly, stating that they would no longer be patronizing Urban Outfitters again because of this incident.

By failing to accept responsibility, the company exacerbated an already unfortunate public relations failure. Contrast this incident with the DiGiorno Pizza incident. A DiGiorno's pizza social media rep responded to a trending topic: hashtag #WhyIStayed. The topic began in the wake of the recent Ray Rice abuse scandal, with women tweeting about their personal experiences with abuse. The social media representative, in an effort to raise brand awareness by weighing in on a trending topic, posted the following tweet: "#WhyIStayed. You had Pizza." (@DiGiorno Pizza). The representative quickly apologized for the offending tweet and followed up with an explanation: "A million apologies. I did not read what hashtag was about before posting" (@ DiGiornoPizza). However, this was not the end of DiGiorno's restitution. The DiGiorno representative also engaged both recognition and responsibility for the offense and repeatedly expressed remorse for his actions and, by implication, ensured that such an incident would not occur again, satisfying Kador's (2009) requirement for repetition.

DiGiorno's mistake was a potentially damaging social media foible, given the currency and scope of both the mistake and the societal issues that surround it. The social media rep took full responsibility and made the effort to personally respond to all social media users who tweeted in response. A sampling of those responses offers an excellent case study in best Twitter apology practices:

Figure 5. Best practices example of the Twitter Apology. DiGiorno Rep makes multiple personal apologies to each offended Twitter user who replied to the initial tweet, Courtesy of Ad Week, "DiGiorno is really, really sorry."

Corporate Twitter Apologies

In the case of the DiGiorno Twitter debacle, the company's social media representative addressed each response individually. Additionally, the media rep utilized the tools of an effective apology and made no effort to excuse the blunder. Two days after the initial mistake, after a number of responses to the tertiary audience, the company rep posted a final, blanket apology to the company's feed, stating: "We heard from many of you and we know we disappointed you. We understand, and we apologize to everyone for this mistake" (@DiGiornoPizza). The DiGiorno incident represents best practices in responding to a social media blunder by addressing not only the tertiary audience but also each responding audience member individually. The media rep acknowledges that an offense has been committed and also apologizes personally; in doing so, DiGiorno acknowledges the importance of the most unpredictable demographic, the tertiary audience. However, the potency of this apology does not lie exclusively in the fact that the rep addresses each respondent. The media rep also offers an apology to anyone who might have been offended by DiGiorno's tweet and said nothing. DiGiorno's approach is superior because it recognizes the personal nature of the offense and seeks to address it personally with the injured parties.

The response to DiGiorno's apology was quite favorable, prompting one follower to reply: "People need to learn to come clean gracefully like @DiGiornopizza. You're forgiven, pizza man" (@carlydermott). Utilizing the media where the offense took place allowed for DiGiorno to exercise control over the response, and the audience to whom they would respond. Changing the venue for responding to the offense would be to risk losing the initial tertiary audience and possibly even expanding the audience by raising awareness of the offense. By staying on Twitter, the company wisely navigated the perceived intimacy that Twitter followers enjoy with the users they follow. In short, the DiGiorno social media rep utilized the company's persona to respond to its followers as if the account were representative of an individual as opposed to a corporation.

The company did not attempt to dissemble or divert blame from itself. Instead, they acknowledged full responsibility for their offensive tweet and made every effort to address each complaint directly.
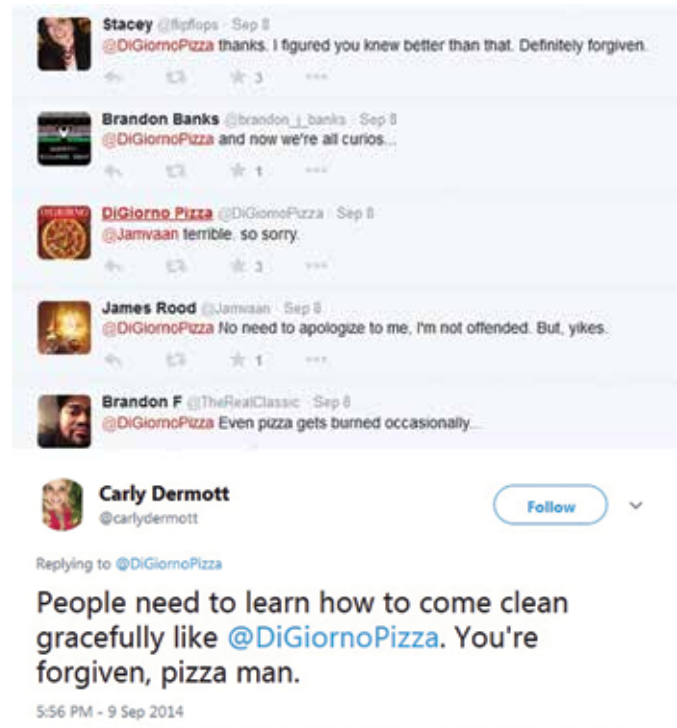
Figure 6. Best Practices Part II. Twitter DiGiorno receives positive replies to their Twitter apology.

Remorse

Perhaps one of Kador's (2009) most important criteria is the admission of remorse. He states that "Because there is no way to know whether someone else is experiencing remorse, we rely on a variety of verbal and nonverbal cues. By far the most important verbal cue, without which a statement falls short of being an actual apology, is the phrase 'I'm sorry' or 'I apologize'" (p. 85). Given that body language and other non-verbal cues are absent in electronic communication, it is a bit more difficult to express remorse. Unlike a face-to-face apology, on social media, the non-verbal dimensions of body language, tone, and facial expression are unavailable.

In the sampling of Twitter apologies drawn for this study, 92.5% expressed remorse via Illocutionary Force Indicating Device. Of the apologies studied, the word "sorry" appeared ten times, whereas variations on "apology/apologize" appeared 33 times (some apologies from the sample utilize multiple IFIDs). Of the apologies that lacked any IFID, the corporate tweets were an attempt to minimize the offense or to defer blame for the initial offense. Case in point, the Kenneth Cole apology for attempting to co-opt the

Allen Berry

Arab Spring as a marketing tool, "Kenneth Cole: 'Re Egypt Tweet: we weren't intending to make light of a serious situation. We understand the sensitivity of this historic moment -KC'" (Ehrlich, 2011). While the tweet does respond to the initial offense, it lacks the expression of remorse and seeks only to minimize culpability for any outrage that it may have caused. In similar fashion, the Gap attempted to remove all blame by suggesting that their mistake was a misunderstanding on the part of their followers. The Gap tweeted, "To all impacted by #Sandy, stay safe. Our check-in and tweet earlier were only meant to remind all to keep safe and indoors" (Wasserman, 2012). The apology here does not meet the criteria for an apology at all, due to its lack of any of Kador's criteria. Instead, it seeks to divert any attention away from the insensitive nature of the tweet or to even admit any wrongdoing. Twitter can be used as an effective media to apologize for mistakes, as was demonstrated admirably by DiGiorno Pizza. The representative responded to every tweet and the responses were all posted on the media platform where the original offense was committed.

Restitution

Restitution is an aspect of Kador's (2009) strategy that presents certain challenges in the Twittersphere. Making restitution in the physical world can be completed in a number of ways. The offender might offer coupons, which was the strategy employed by the manager of a St. Louis Chipotle restaurant for a disgruntled customer who happened to write for the Riverfront Times. The customer took to Twitter to lodge her complaint and was quickly contacted by Chris Arnold, the company's social media rep. This resulted in the manager apologizing to the customer and offering coupons. The social media rep followed up as well: "Manager did the right thing. May be the only right thing on this visit. My apologies. Hope you'll use the coupons to see us again" (Wheeler, 2012). However, restitution is not necessarily restricted to the exchange of tangible goods or services. Kador states that "restitution is the clearest expression of the offender's desire to restore the relationship" (p. 97). This can be done by offering the acknowledgment that work is being done to repair the relationship and that can be accomplished by stating that some sacrifice has been made to that end.

Consider the previously mentioned Home Depot controversy where a social media rep tweeted a racist photograph. In this instance, restitution took the form of firing the rep who made the racist tweet. The apology contained the promise that someone was held accountable for the injury he had committed. Although there was no tangible offer of goods or services, there was action taken to call the party responsible into account for his actions.

Figure 7. The Repetition Strategy in action. Via Twitter. Home Depot Reassures followers that the offense of their racist tweet will not be repeated.

Repetition

The final dimension of Kador's strategy for apologies is repetition. In order for an apology to be effective, there must be the assurance that it will not happen again, and in the realm of Twitter apologies, it is the rarest. As proven by our sample, only 17.5% of the apologies sampled offered assurance that the offense would not be repeated. According to Kador (2009), "This is the step that many otherwise thoughtful apologies omit. But through that omission otherwise good apologies suffer, because all victims may have a conscious or unconscious barrier to accepting an apology" (p. 113). Accepting an apology makes the wronged party vulnerable by extending trust to someone who has already violated said trust. Acceptance places the offended party at risk of being hurt again. An assurance from the offender that the harm will not reoccur helps restore the broken trust.

Case in point is the message issued from KitchenAid's Twitter account, which made a joke about President Obama's grandmother's death prior to his taking office. The tasteless joke was quickly removed from the company's account and an apology issued. The following apology appeared on the company's Twitter feed:

Corporate Twitter Apologies

Figure 8. KitchenAid's Repetition Strategy. Via Twitter.

This tweet was followed shortly by a second tweet from the company offering the assurance that repetition would not occur.

Figure 9. Repetition Strategy part II. Via Twitter. KitchenAid assures followers that the offending party who posted an offensive tweet has been fired.

By assuring followers that the person responsible for the offense would no longer be in a position to repeat it, KitchenAid was able to restore the relationship with their customers as evidenced by Twitter follower's responses. Although there were those who were not so ready to forgive, the reaction was mostly positive.

An effective apology should contain the dimension of repetition. In order to restore trust, there must be the assurance that the offense will not be repeated and damage the mended trust. This is difficult for both parties in the Twittersphere, because the audience and its sensibilities are, at best, unpredictable. Depending on the nature of the offense, the assurance of repetition is not always possible; however, as evidenced by the KitchenAid example, when possible, the attempt should be made.

Figure 10. Twitter user response. Via Twitter. Twitter users respond to KitchenAid's apology.

Conclusion

Social media is a difficult landscape for corporations to navigate. Despite its obvious benefits with regard to inexpensive (and in some cases cost-free) marketing and promotion, social media does carry a measure of risk. The instantaneous nature of Twitter communication makes mistakes difficult to recover from. The emerging genre of the Twitter apology is still developing, but the strategies laid out by John Kador (2009) provide an effective approach to making amends for offenses. In addition to the dimensions he suggests, it is crucial that the party offering the apology consider and address both primary and tertiary audiences. Thanks to the inception of social media, an offense that might have

Allen Berry

once been handled quietly among a few involved parties now has the potential to destroy a company's public image. The modern audience is only limited to those who have access to the Internet. A small measure of private restitution is no longer sufficient to make reparations. Modern social media audiences have become de facto stakeholders in the interests of the brands they follow. Therefore, social media users expect a public mea culpa in the event of public debacles. Addressing these offended parties is crucial and it must be done in the medium where the offending remarks were posted. To do otherwise is to risk alienating or failing to reach the primary and tertiary audiences of the original offense. Done correctly, the Twitter apology can restore consumer confidence and strengthen the brand's image. Therefore, it is crucial that both corporate social media representatives and small business users educate themselves on the proper strategy for managing social media blunders.

In order to create a successful Twitter apology, the social media manager must employ some of the aspects of traditional apologies but with a mind toward the ever-expanding nature of the Twitter audience. First and foremost, the apology must be managed on the platform where the initial offense took place. Moving the discussion beyond Twitter, to the company website or Facebook account, is to risk alienating the original audience who might be following the fall-out of the initial response. Additionally, apologizing on a different platform can expand the audience by drawing attention to the inciting event.

Acceptance of responsibility is of key importance. Contrary to the standard rule of avoiding culpability or attempting to shift blame to a third party, social media blunders are so clearly public there is little point in attempting to deny the offense. Once the initial offense has occurred, make the apology quickly in order to try to control the potential damage. Remember that a particularly damaging tweet can go viral, so the audience expands extremely quickly. Context collapse is an important consideration when dealing with Twitter foibles. Consistently, the verbal and non-verbal cues that provide context and clarity are removed, leaving the information to the interpretation of the reader—an interpretation that can take on unintended dimensions. Because the offense takes place on Twitter, the audience is potentially global, and the stakeholders become anyone who has access to social

media and whose impression of the company might be negatively affected.

As a matter of course, the social media manager should, if at all possible, respond to everyone who replies. This was best demonstrated in the case of DiGiorno's Pizza, where the social media rep followed up with a blanket tweet apologizing to any potential audience members who witnessed the offense and chose not to respond. Although no strategy is guaranteed to reach all audiences, this strategy will address the greatest number of potential audiences.

As demonstrated by the examples of Urban Outfitters and AT&T, an apology that fails to accept responsibility for the offense or attempts to shift blame only further angers the audience and increases the damage to the company's public image. While even the sincerest apology will have its detractors, an insincere post is subject to the same viral consequences as the initial offense.

The corporate Twitter apology differs in scope and structure from the standard corporate apology principally in the way that it must address its audience. A Twitter offense is much more difficult to address due to the speed and near infinite reach of the platform. In dealing with a social media foible, speed and comprehensiveness are invaluable. Although these incidents can be damaging to a corporation's image, by employing this effective strategy, a company can recover and emerge with a stronger public image.

References

Alter, C. (2013, November 7). Home Depot apologizes for racist tweet. Time, Inc. Retrieved from http://business.time.com/2013/11/07/home-depot-apologizes-for-racist-tweet/

Altman, J. D. (2012, February 22). The most disastrous corporate tweets that probably got people fired. Someecards, Inc. Retrieved from http://www.someecards.com/news/so-that-happened/the-most-disastrous-tweets-that-probably-got-people-fired/

@DiGiornosPizza. (2014, September 8). A million apologies. Did not read what the hashtag was about before posting [Tweet]. Retrieved from https://twitter.com/digiornopizza/status/509178151927173120?lang=en

@DiGiornoPizza, (2014, September 9). We heard from many of you, and we know we disappointed you.

Corporate Twitter Apologies

We understand, and we apologize to everyone for this mistake [Tweet]. Retrieved from https://twitter.com/digiornopizza/status/509472611802173441

@*esquire* (2013, September 13). Relax, everybody. There was a stupid technical glitch on our "Falling Man" story and it was fixed asap. We're sorry for the confusion [Tweet]. Retrieved from https://twitter.com/esquire/status/377826870865448960

@juliannehough. (2013, October 26). I am a huge fan of the show Orange is the New black, actress Uzo Aduba and the character she has created. It certainly was never my intention to be disrespectful or demeaning to anyone in any way. I realize my costume hurt and offended people and I truly apologize [Tweet]. Retrieved from http://www.twitlonger.com/show/n_1rqfec1

@stephenasmith. (2014, July 25). My series of tweets a short time ago is not an adequate way to capture my thoughts so I am using a single tweet via Twitlonger to more appropriately and effectively clarify my remarks from earlier today about the Ray Rice situation. I completely recognize the sensitivity of the issues and the confusion and disgust that my comments caused. First off, as I said earlier and I want to reiterate strongly, it is never OK to put your hands on a women. Ever. I understand why that important point was lost in my other comments, which did not come out as I intended. I want to state very clearly. I do NOT believe a woman provokes the horrible domestic abuses that are sadly such a major problem in our society. I wasn't trying to say that or even imply it when I was discussing my own personal upbringing and the important role the women in my family have played in my life. I understand why my comments could be taken another way. I should have done a better job articulating my thoughts and I sincerely apologize [Tweet]. Retrieved from http://www.twitlonger.com/show/n_1s2kd5m.

@UrbanOutfitters. (2014, September 15). Urban Outfitters sincerely apologizes for any offense our Vintage Kent State Sweatshirt may have caused. It was never our intention to allude to the tragic events that took place at Kent State in 1970 and we are extremely saddened that this item was perceived as such. The one-of-a-kind item was purchased as part of our sun-faded vintage collection. There is no blood on this shirt nor has this item been altered in any way. The red stains are discoloration from the original shade of the shirt and the holes are from natural wear and fray. Again, we deeply regret that this item was perceived negatively and we have removed it immediately from our website to avoid further upset [Tweet]. Retrieved from http://www.twitlonger.com/show/n_1sagorq

Bauman, D. (2011). Evaluating ethical approaches to crisis leadership: Insights from unintentional harm research. *Journal of Business Ethics*, *98*(2), 281–295. doi:10.1007/s10551-010-0549-3.

Beaubien, G. (2014, February 6). Are corporate Twitter apologies a result of tweeting too often? *PRSA*. Public Relations Society of America. Retrieved from https://www.prsa.org/SearchResults/view/10538/105/Are_Corporate_Twitter_Apologies_a_Result_of_Tweeti#.WFBiR31ywso

Benoit, W. L. (1997). Image repair discourse and crisis communication. *Public Relations Review*, *23*, 177–186. doi:10.1016/S0363-8111(97)90023-0

Boyd, D. P. (2011). Art and artifice in public apologies. *Journal of Business Ethics*, *104*(3), 299–309.

Bowdon, M. A. (2014). Tweeting an ethos: Emergency messaging, social media, and teaching technical communication. *Technical Communication Quarterly*, *23*, 35–54. doi:10.1080/10572252.2014.850853

Collins, B. (2014). Abuse magnets: The people behind corporate Twitter accounts. *PC Pro*, (239), 34

Chu, S., & Sung, Y. (2015). Using a consumer socialization framework to understand electronic word-of-mouth (eWOM) group membership among brand followers on Twitter. *Electronic Commerce Research and Applications*, *14*(4), 251–260. doi:10.1016/j.elerap.2015.04.002

Dimitrova, K. (2013, December 21). Woman fired after tweet on AIDS in Africa sparks Internet outrage. Retrieved from http://abcnews.go.com/International/woman-fired-tweet-aids-africa-sparks-internet-outrage/story?id=21298519

Ehrlich, B. (2011, February 3). Kenneth Cole's #Cairo tweet angers the Internet. Retrieved from http://mashable.com/2011/02/03/kenneth-cole-egypt/

Farkas, K. (2014, September 15). Urban Outfitters issues an apology for selling red-splattered Kent State University sweatshirt. Retrieved from http://www.cleveland.com/metro/index.ssf/2014/09/urban_outfitters_issues_apolog.html

Freedman, L. (2016, September 22). The 12 worst social-media fails of 2016. Retrieved from https://www.entrepreneur.com/slideshow/272286

Gentle, A. (2013). *Conversation and community: The social web for documentation* (2nd ed.). Laguna Hills, CA: Xml Press.

Griner, D. (2014, September 9). DiGiorno is really, really sorry about its Tweet accidentally making light of domestic violence. Retrieved from http://www.adweek.com/adfreak/digiorno-really-really-sorry-about-its-tweet-accidentally-making-light-domestic-violence-159998

Hearit, K. M. (2006). *Crisis management by apology: Corporate response to allegations of wrongdoing*. Mahwah, NJ: Routledge.

Kador, J. (2009). *Effective apology: Mending fences, building bridges, and restoring trust*. San Francisco, CA: Berrett-Koehler.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, *53*, 59–68. doi:10.1016/j.bushor.2009.09.003

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, *54*, 241-251. doi:10.1016/j.bushor.2011.01.005.

Kim, E., Sung, Y., & Kang, H. (2014). Brand followers' retweeting behavior on Twitter: How brand relationships influence brand electronic word-of-mouth. *Computers in Human Behavior*, *37,* 18–25. doi:10.1016/j.chb.2014.04.020.

KitchenAid. (2012, October 3). It was carelessly sent in error by a member of our Twitter team who, needless to say, won't be tweeting for us anymore [Tweet]. Retrieved from https://twitter.com/KitchenAidUSA/status/253708391124459520

Marwick, A. E., & Boyd, D. (2011). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society*, *13*(1), 114–133. doi:10.1177/1461444810365313

McHugh, J. D. (2013, May 22). @karon @johndphoto I worded my answer terribly. I really apologize for what it sounded like outside of the context and notion of Flickr pro [Tweet]. Retrieved from https://twitter.com/marissamayer/status/337233311153938432.

McEachern, R. W. (2013). Social media challenges for professional writers. *Journal of Current Issues in Media & Telecommunications*, *5*, 279–287.

Memmott, M. (2013, February 25). "The onion" apologizes for offensive Tweet about 9-Year-Old Quvenzhane Wallis. NPR. Retrieved from http://www.npr.org/sections/thetwo-way/2013/02/25/172884045/the-onion-apologizes-for-offensive-tweet-about-9-year-old-quvenzhane-wallis

Page, R. (2014). Saying 'sorry': Corporate apologies posted on Twitter. *Journal of Pragmatics*, *62,* 30–45. doi:10.1016/j.pragma.2013.12.003.

Lee, S., & Chung, S. (2012). Corporate apology and crisis communication: The effect of responsibility admittance and sympathetic expression on public's anger relief. *Public Relations Review*, *38*(5), 932–934. doi:10.1016/j.pubrev.2012.08.006.

LaCapria, K. (2013, November 7). Home Depot racist tweet causes controversy, company fires social media. Social News Daily. Retrieved from https://socialnewsdaily.com/19030/home-depot-racist-tweet-causes-controversy-company-fires-social-media-rep/11 Twitter brand fails. (2014, October 24). HLN TV. Retrieved from http://www.hlntv.com/articles/2014/10/24/11-twitter-brand-fails/

Tovey, J. (2003). Companies can apologize: Corporate apologies and legal liability. *Technical Communication, 50*, 420-421.

@UrbanOutfitters Twitlonger. (2014, September 15). Retrieved from http://www.twitlonger.com/show/n_1sagorq

Wasserman, T. (2014, September 9). DiGiorno pizza accidentally makes light of a domestic violence Hashtag. Mashable. Retrieved fromhttp://mashable.com/2014/09/09/digiorno-pizza-whyistayed-hashtag/#qAcqawbczZqi

Wasserman, T. (2012, October 29). Gap criticized for insensitive Tweet during hurricane sandy. Mashable. Retrieved from http://mashable.com/2012/10/31/gap-tweet-hurricane-sandy/#uMRu5CoR5Gqd

Wessley, T. (2016). Managing social media chatter, complaints, conflicts and crises. Weidert. Retrieved from https://www.weidert.com/whole_brain_marketing_blog/bid/117503/Managing-Social-Media-Chatter-Complaints-Conflicts-and-Crises

Wheeler, R. (2012, September 14). Twitter fight, take Two: How Chipotle uses social media. River Front Times. Retrieved from http://www.riverfronttimes.com/foodblog/2010/03/17/twitter-fight-take-two-how-chipotle-uses-social-media

Corporate Twitter Apologies

About the Author

Allen Berry received his PhD in creative writing from the University of Southern Mississippi in 2013 and a Certificate of Technical Writing from University of Alabama Huntsville's Graduate Program in 2015. He currently teaches technical and business writing online for the University of Alabama Huntsville and Composition and Literature at South Georgia State College. He is the author of three collections of poetry. This is his first publication to appear in *Technical Communication*. He is available at jab0003@uah.edu.

Appendix 1

Twitter Apologies Examined for this Article

1) Urban Outfitters sincerely apologizes for any offense our Vintage Kent State Sweatshirt may have caused.

2) @KelloggsUK the cereal company posted '1 RT = 1 breakfast for a vulnerable child'

   'We want to apologise for the recent Tweet, wrong use of words. It's deleted. We give funding to school breakfast clubs in vulnerable areas.'

3) @USAirways We apologize for an inappropriate image recently shared as a link in one of our responses. We've removed the Tweet and are investigating.

4) @DiGiorno: I stayed because you had pizza.

   @ DiGiorno: A million apologies. I did not read what hashtag was about before posting.

   @ DiGiorno: http://www.adweek.com/adfreak/digiorno-really-really-sorry-about-its-Tweet-accidentally-making-light-domestic-violence-159998

5) IAC PR counsel: ""Going to Africa. Hope I don't get AIDS. Just kidding. I'm white!"

   Twitter Account Cancelled.

6) Marissa Mayer, Yahoo CEO: I worded my answer terribly. I really apologize for what it sounded like out of the context and notion of Flickr Pro.

7) LA Kings We apologize for the Tweets that came from a guest of our organization. They were inappropriate and do not reflect the LA Kings.

8) Gerald Scarfe has never reflected the opinions of the Sunday Times. Nevertheless, we owe major apology for grotesque, offensive cartoon.

9) KitchenAid, Obama Tweet: in one Tweet, she said that "I would like to personally apologize to President @BarackObama, his family and everyone on Twitter for the offensive Tweet sent earlier." In another, she said the offensive Tweet was "carelessly sent in error by a member of our Twitter team who, needless to say, won't be Tweeting for us anymore."

10) Spaghetti O's: "We apologize for our recent Tweet in remembrance of Pearl Harbor Day. We meant to pay respect, not to offend."

11) Home Depot Racist Tweet apology: "We have zero tolerance for anything so stupid and offensive. Deeply sorry. We terminated agency and individual who posted it."

12) AT &T: We apologize to anyone who felt our post was in poor taste. The image was solely meant to pay respect to those affected by the 9/11 tragedy.

13) Atlanta Journal Constitution apologizes for racist Tweet: The AJC apologizes for & deeply regrets the Tweet that was posted earlier today. We are working to address this situation internally.

14) Entenmann's: Sorry everyone! We weren't trying to reference the trial in our Tweet. We should have checked the trending hashtag in our Tweet.

15) Kenneth Cole: "Re Egypt Tweet: we weren't intending to make light of a serious situation. We understand the sensitivity of this historic moment -KC"

16) Spinning Platters, Rashida Jones: Made a thoughtless comment about John Travolta. I sincerely apologize. Nobody's personal life is my business.

17) Daniel Tosh: all the out of context misquotes aside, i'd like to sincerely apologize http://j.mp/PJ8bNs

18) Jason Kidd Drunk Driving: I regret any disruption my accident last weekend may have caused

Corporate Twitter Apologies

members of the community and want to thank the local authorities.

19) https://Twitter.com/LuisSuarez9/status/483659463417548800

20) Oprah Winfrey to Nielsen: "I removed the Tweet at the request of Nielsen. I intended no harm and apologize for the reference."

21) Ashton Kutcher: The Tweet @aplusk wishes he never wrote? "How do you fire Jo Pa? #insult #noclass as a hawkeye fan I find it in poor taste," dashed off on Nov. 10 after Kutcher heard that Paterno had been fired, but hadn't heard why he had been fired. The worst kind of "oops." Kutcher apologized profusely to his 8 million followers, Tweeted a picture of himself next to a sign saying "I'm with stupid," and then announced he would be turning the management of his feed over to his publicists.

22) Alec Baldwin: Alec Baldwin was so incensed that he was asked to stop playing Words with friends on a flight between L.A. and N.Y. in early December that he couldn't resist Tweeting it. "Flight attendant on American reamed me out 4 playing WORDS W FRIENDS while we sat at the gate, not moving. #nowonderamericaairisbankrupt." The anger expressed in that Tweet, and a subsequent one that ended "#realwayisunited" gave the press something to pounce on, and by the end of the day, the story was everywhere. Baldwin later apologized for his behavior on Huffington Post and deactivated his Twitter account.

23) Patton Oswald, false Tweets: @pattonoswalt Oops. Just deleted my last Tweet. & would like to apologize to seniors & sufferers of Lyme disease. I was out of bounds.

@pattonoswalt Yikes. Had to delete another Tweet. I crossed a line on that one. Also, I thought 12 YEARS A SLAVE and THE BUTLER were brilliant.

http://www.funnyordie.com/lists/3a81fffa8e/patton-oswalt-angers-Twitter-idiots-with-fake-apologies

24) @NYPD25Pct Sincere apologies 4 insensitive & unprofessional Tweets. Not how I was raised, trained, have served. Will work 2 restore trust/confidence.

25) Fahmi Fadzil, sentenced to 100 Twitter apologies: 1/100 I've DEFAMED Blu Inc Media & Female Magazine. My Tweets on their HR Policies are untrue. I retract those words & hereby apologize

26) Stephen A. Smith: My series of Tweets a short time ago is not an adequate way to capture my thoughts so I am using a single Tweet via Twitlonger to more appropriately and effectively clarify my remarks from earlier today about the Ray Rice situation. I completely recognize the sensitivity of the issues and the confusion and disgust that my comments caused. First off, as I said earlier and I want to reiterate strongly, it is never OK to put your hands on a women. Ever. I understand why that important point was lost in my other comments, which did not come out as I intended. I want to state very clearly. I do NOT believe a woman provokes the horrible domestic abuses that are sadly such a major problem in our society. I wasn't trying to say that or even imply it when I was discussing my own personal upbringing and the important role the women in my family have played in my life. I understand why my comments could be taken another way. I should have done a better job articulating my thoughts and I sincerely apologize.

27) French Journalist: 466 times In May, two French politicians won a novel conviction against a critic who had been calling them names on Twitter. In addition to paying a fine and court costs, the critic was ordered to Tweet the same message 466 times over 30 days: "I have severely insulted Jean-Francois Cope and Nathalie Kosciusko-Morizet. I regret and apologize."

28) Chipotle Media apology: Manager did the right thing. May be the only right thing on this visit. My apologies. Hope you'll use the coupons to see us again. (Sat 13 Mar 3:54) http://blogs.riverfronttimes.com/gutcheck/2010/03/Twitter_fight_chipotle_uses_social_media.php

Allen Berry

29) Soccer Player over infidelity scandal @_
OlivierGiroud_ Ultimate precision with respect
to my apologies...Yes I made a mistake but not I
have not committed adultery! Things are clear... @_
OlivierGiroud_ I apologise to my wife, family and
friends and my manager, team-mates and Arsenal
fans. http://bleacherreport.com/articles/1962149-
olivier-giroud-issues-apology-on-Twitter-amidst-
infidelity-scandal

30) Julianne Hough: "I am a huge fan of the show
Orange Is the New Black, actress Uzo Aduba, and
the character she has created," Hough Tweeted. "It
certainly was never my intention to be disrespectful
or demeaning to anyone in any way. I realize my
costume hurt and offended people and I truly
apologize."

http://www.twitlonger.com/show/n_1rqfec1

31) Southwest Airlines apologizes to Kevin Smith: @
ThatKevinSmith hey Kevin! I'm so sorry for your
experience tonight! Hopefully we can make things
right, please follow so we may DM!

Hey folks - trust me, I saw the Tweets from @
ThatKevinSmith I'll get all the details and handle
accordingly! Thanks for your concerns!

I read every single Tweet that comes into this
account, and take every Tweet seriously. We'll
handle @thatkevinsmith issue asap

I've read the Tweets all night from @thatkevinsmith
- He'll be getting a call at home from our Customer
Relations VP tonight.

@ThatKevinSmith Ok, I'll be sure to check it out.
Hopefully you received our voicemail earlier this
evening.

@ThatKevinSmith Again, I'm very sorry for the
experience you had tonight. Please let me know if
there is anything else I can do.

@ThatKevinSmith We called you on the number
you had on file in your reservation. If you prefer a
different number, please DM me. Thanks!

Our apology to @ThatKevinSmith and more
details regarding the events from last night - http://
cot.ag/96KHC7 #Southwest http://mashable.
com/2010/02/14/southwest-kevin-smith/

32) Belvedre Vodka: We apologize to any of our fans
who were offended by our recent Tweet. We
continue to be an advocate for safe and responsible
drinking. http://observer.com/2012/03/belvedere-
vodka-sort-of-apologizes-for-rapey-Twitter-
advertising/

33) Gilbert Gotfried, Tsunami Tweet: @Therealgilbert
I sincerely apologize to anyone who was offended
by my attempt at humor regarding the tragedy in
Japan.

@therealgilbert: I meant no disrespect, and my
thoughts are with the victims and their families.

34) MMA Fighter, War Machine: @WarMachine170
I Tweeted something earlier that was stupid,
insensitive and wrong. Rape is never something
to joke about ever. I sincerely apologize. http://
bleacherreport.com/articles/1734067-bellator-ceo-
bjorn-rebney-issues-statement-on-war-machines-
offensive-Tweet

35) Chiefs Apologizes to fan: @KCChiefs I apologize
to the fans for my response to a Tweet sent
to me earlier. No excuse for my actions. I
am truly sorry and it won't happen again.
http://www.kshb.com/sports/football/chiefs/
chiefs-apologize-for-angry-Twitter-message

36) Author Don Milleris apology for offensive blog
post: So very sorry to have offended you and
your friends. Very thankful for your tone. http://
thoughtsbynatalie.com/2011/08/Twitter-apologies-
gratitude.html

37) *The Onion* apologizes to Quivenze Wallis: "On
behalf of *The Onion*, I offer my personal apology
to Quvenzhané Wallis and the Academy of Motion
Picture Arts and Sciences for the Tweet that was
circulated last night during the Oscars. It was crude
and offensive—not to mention inconsistent with

Corporate Twitter Apologies

The Onion's commitment to parody and satire, however biting.

No person should be subjected to such a senseless, humorless comment masquerading as satire.

The Tweet was taken down within an hour of publication. We have instituted new and tighter Twitter procedures to ensure that this kind of mistake does not occur again.

In addition, we are taking immediate steps to discipline those individuals responsible.

Miss Wallis, you are young and talented and deserve better. All of us at *The Onion* are deeply sorry."

38) Healthcare.gov apologizes: @HealthCareGov @elmnmd We apologize for the technical difficulties. We are working to fix these issues as soon as possible. Thank you for your patience!

http://www.nrcc.org/2013/10/01/obamacare-making-Twitter-timeline-healthcaregov-sad/

39) Pepsi apologizes for suicide ad: Huw Gilbert, Senior Manager for Communications at Pepsico, posted these replies:

@christinelu Huw from Pepsi here. We agree this creative is totally inappropriate; we apologize and please know it won't run again. #pepsi

@christinelu @huwgilbert posted our response. My best friend committed suicide - this is a topic very close to my heart. My deepest apologies.

http://www.cbsnews.com/news/pepsi-apologizes-on-Twitter-for-suicide-ad-by-bbdo/

40) Durex Condoms apologizes: The Tweet read, "We wrote a post supporting Taeyeon and Baekhyun's love. As idols getting public attention, it would not be easy to love. Durex supports all kinds of love. However, we found out that this support could greatly hurt the fans. We apologize."

http://www.allkpop.com/buzz/2014/06/uh-oh-condom-fail-durexs-Twitter-apologizes-for-inappropriate-baekhyun-and-taeyeon-Tweet

The Burden of Ambiguity: Writing at a Cooperative

Avery C. Edenfield

Abstract

Purpose**:** While many organizations use ambiguity to strategically build a "unified diversity" around an organization's mission, democratically managed organizations need to tread a narrow path between necessary ambiguity (which allows flexibility) and dysfunctional ambiguity (which causes disarray). To illustrate, I report a subset of findings regarding occasions when ambiguous documents had a significant impact on a democratically managed organization.

Methods**:** I conducted a three-phase study of a democratic cooperative. Using a mixed-methods approach, I sought to uncover the ways technical and professional communication (TPC) concerns like ambiguity and clarity function in a democratic business. In my analysis, I looked for patterns and dissonance between/among artifacts and participants, paying special attention to areas of ambiguity. Interviews and transcripts were analyzed alongside various genres using rhetorical analysis.

Results**:** Looking at two significant documents—job descriptions and bylaws—I found that ambiguity was rarely benign at Owen's House. In the job descriptions, ambiguity rendered key positions dysfunctional and undermined the collective, resulting in a crisis. However, ambiguity in the bylaws allowed the collective to reinterpret organizational goals in support of necessary changes critical to achieving solvency.

Conclusion**:** When building unified diversity, democratic organizations must consider the positive and negative consequences of textual ambiguity. This consideration should extend to regulatory documents where clarity is often an assumed objective. Documents need to be flexible enough to adapt to changes and defined enough to avoid sliding into dysfunction.

Keywords: ambiguity, communication, texts, bureaucracy, cooperative

Practitioner's Takeaway:

- Overview: Though documents in a democratic organization may look like those created by a conventional firm, these documents may function differently for three reasons. First, in the absence of a primary decision-maker or a hierarchical structure, regulatory texts act as a framework for the organization. Second, these jointly written texts must balance ambiguity and precision. Third, in such a unique workplace, ambiguity is not always benign and can either be debilitating or constructive.
- Implication 1: The efficacy of strategic ambiguity is subject to the following conditions: the text addresses an individual vs. the collective, the text addresses the abstract vs. the concrete, the scale of the organization is small vs. rapidly growing or large.
- Implication 2: Strategic ambiguity in regulatory documents challenges the assumed need for clarity and precision in documentation.

The Burden of Ambiguity

Introduction

Many organizations strategically use ambiguity; documents often contain content that is "ambiguous and unclear," yet, successfully balancing ambiguity and precision can create a "unified diversity" (Contractor & Ehrlich, 1993; Eisenberg, 1984) among stakeholders, e.g. building consensus on abstract principles and allowing multiple parties to claim victory (Davenport & Leitch, 2005; Paul & Strbiak, 1987, p. 149). Overly precise texts may lack flexibility and may require a clear agreement by all parties (Davenport & Leitch, 2005; Eisenberg, 1984). Most of the organizational communication scholarship around ambiguity focuses on mission statements and goals because vague language in regulatory texts, such as job descriptions or codes of conduct, may render the organization dysfunctional. However, in democratically managed firms, which operate without hierarchy and instead rely on consensus, ambiguity may extend to documents intended to regulate behavior. These organizations may need to tread a narrow path between necessary ambiguity (which allows flexibility) and dysfunctional ambiguity (which causes disarray). This need for additional ambiguity may extend beyond abstract principles to regulations.

Given the absence of structure that a central decision-maker provides and that vague language affords multiple interpretations, ambiguity may be an important mechanism for bringing people to consensus in order to work together. This may be true even with regulatory texts, where achieving a balance of ambiguity is crucial because of the text's dozens of decision-makers of equal authority and a cacophony of voices, motives, and values. In a democratic workplace, a precisely worded, prescriptive document would require a unanimous interpretation that may be difficult if not impossible to achieve. Strategic ambiguity in regulatory documents challenges the assumption of the necessity of clarity and precision prevalent in technical and professional communication (TPC). I argue that ambiguity in collaboratively written, regulatory texts plays a crucial—and problematic—role in business operations for at least three reasons. First, in the absence of a primary decision-maker or a hierarchical structure, writing acts as a framework for the organization, holding it together. Second, and related to the first, jointly written governing texts must walk a thin line between nebulous

ambiguity and precision. Third, ambiguity in such a unique workplace is not always benign and can be either debilitating or constructive.

This article reports findings from an examination of one type of democratic business. In order to better understand the role of writing in such a unique organization, I studied Owen's House Cooperative (all names, locations, and other identifying information have been changed), a business best described as a community space operating as a pub. During my two-year study, the business experienced a significant crisis, in part due to ambiguity. In one situation, I witnessed textual ambiguity inhibit the organization. In another, ambiguity helped the organization recover. Writing practice was a key factor in each scenario.

To share these results, I begin with an overview of hierarchy and workplace texts, democratic control and cooperatives, and strategic ambiguity and its defining attributes. Then, I describe my research study and examine two foundational documents: a job description and the organization's bylaws. Finally, I share my findings, namely that democratically managed organizations may strategically use ambiguity in regulatory documents to allow for flexibility and to encourage ongoing dialogue among those involved, and that this ambiguity can either debilitate an organization or create an opportunity to evolve. I conclude with two implications of this research for TPC scholars and practitioners.

Literature Review

In the sections below, I provide an overview of the relationship between hierarchical control and texts relevant to TPC. Then, I introduce cooperatives as an example of an organization that values democratic control. Because of their commitment to democratic control and related values that ambiguity may undermine, cooperatives are critical locations for studying strategic ambiguity.

Hierarchy and Workplace Texts

TPC has long documented the relationship of technical communication to hierarchical organizations, characterized by "centralized decision making," "scaler chains of communication," and predictable behavior (Harrison, 1994, p. 249; see also Longo, 2000; Zuboff, 1988). Harrison (1994) declared that the very idea

Avery C. Edenfield

of management is "inseparable from hierarchical connotations" and that top-down, command-and-control is nearly ubiquitous (p. 249; see also Kastelle, 2013). For the past two decades, TPC scholarship has called attention to the role documents play in maintaining such structures. For example, Winsor (2003) examined the role of documentation in an engineering facility and found that even a mundane document like a work order functioned to maintain superior-subordinate positions. Also, Zachry's (2000) study of the Rath Packing Plant found that stable genres came to act in service of maintaining hierarchies at the organization and control over peoples' work activities, identities, and positions within the company (pp. 65, 66, 68).

Concurrently, in the past few decades, scholars have also begun to look to alternative organizations that shift power from a top-down, command-and-control style management to team-based, bottom-up management. Scholars are also considering how this decentralized work affects employee agency, communication, and productivity (Clark, 2006; Johnson-Eilola, 1996; Spinuzzi, 2013, 2014, 2015; Wilson, 2001). Within this research, some have focused on deployment of the rhetorics of empowerment, i.e., persuasive language of greater employee agency and decision-making power. In part, they have debated about whether this language of greater employee agency is actualized or if it is simply operationalized to gain consent toward greater productivity and buy-in without the materialization of rewards (Clark, 2006). In Faber's (2002) study of community action and rhetoric, he quotes Gee, Hull, and Lankshear (1996):

> [They] argue that the rhetoric of new capitalism is 'insulting to workers' despite its desire for fully informed and participatory employees…employees cannot actually engage in such behavior if the consequences are detrimental to the organization. The employees only have agency insofar as this agency acts in the interests of the company. pp. 64–65

As Clark, Faber, and Gee, Hull, and Lankshear demonstrate, rhetorics of democratic participation and employee empowerment can be a powerful motivator but may lack a realization of democracy.

Despite these scholars taking note of some of the issues these flatter, distributed, networked or unconventional organizations may encounter (Gee,

Hull, & Lankshear, 1996; Johnson-Eilola, 1996; Kastelle, 2013; Robertson, 2015; Spinuzzi, 2013, 2014, 2015; Waterman Jr., 1990), there is still scant research on technical documentation and writing practice in democratic organizations, the kind of organizations that intentionally reject hierarchy. In contrast to top-down and command-and-control operation, these organizations operate with unique features. Some of these features may include shared decision making, fewer levels of supervision, some form of consensus process, and greater employee participation and ownership than conventional, hierarchical systems (Cheney, 1995; Craig & Pencavel, 1995; Fakhfakh, Perotin, & Gago, 2009; Harrison, 1994). At times, these organizations may also experience instability or paralysis (*The Cooperative Movement*, 2013, p. 11). Writing may play a strategic role in working through these barriers.

Cooperatives

Sometimes described interchangeably as "bottom-up," "flat(ter)," or "horizontal," cooperatives are one type of democratic organization that may try to actualize ideals of empowerment that Clark (2006), Faber (2002), and others identified. The International Cooperative Alliance (ICA) defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ica.coop). Constructed by and for its members, a cooperative challenges basic tenets of conventional businesses, such as top-down exertions of power; the separation between investors, users, and employees; and the notions of shared ownership. In a cooperative, ideally, democratic values are translated into business principles and then upheld through the organization's self-definition, structure, and culture. Importantly, advocates are careful to point out that it is democratic control and a de-prioritization of profit at the expense of other values that sets the cooperative model apart from other conventional organizations (Cheney, 1995; Williams, 2007). Ideally, the cooperative model seeks to balance profit with the needs of the communities they serve (Williams, 2007; Zeuli & Cropp, 2004).

In the case of the cooperative I studied, and many like it around the world, organizational identity is rooted in democratic control. This ideal is realized through shared governance and expressed in the documentation that the governed themselves create. It

The Burden of Ambiguity

is also a defining feature of democratic management. That is, rather than ownership and control resting in the hands of investors or shareholders, the control rests with the multiple owners of the cooperative, also known as the "one person, one vote" principle (Zeuli & Cropp, 2004, p. 45; see also Cheney, 1995; Pittman, n.d.). The foundational principles of democratic control are traits all cooperatives share to a degree (Cheney, 1995):

1. Some commitment to collective if not necessarily equal ownership by members
2. Some commitment to democratic decision making by members
3. A belief in the viability of like experiments outside of their own experience (p. xiv; see also, Pittman, n.d.).

Along with other locally contingent values, these commitments shape the cooperative to the needs of the community. Cooperatives offer a crucial setting in which to study ambiguity, because they are constructed from the ground up around unity, participation, and shared vision—values ambiguity can undermine (Eisenberg, 1984).

Strategic Ambiguity

Davenport and Leitch (2005) defined strategic ambiguity as "the deliberate use of ambiguity in strategic communication in order to create a 'space' in which multiple interpretations by stakeholders are enabled and to which multiple stakeholder responses are possible" (p. 1604). For Eisenberg (2007), strategic ambiguity is "the human capacity to use the resources of language to communicate in ways that are both inclusive and preserve important differences" (p. x). Drawing from a range of scholarship, Eisenberg and Goodall (1997) "...described four characteristics of strategic ambiguity." First, strategic ambiguity fosters "unified diversity," attempting to unite multiple viewpoints and build "agreement on abstractions" (Davenport & Leitch, 2005, p. 1606; see also Eisenberg & Goodall, 1997). As such, "[s]trategic ambiguity is often found in organizational missions, goals and plans, allowing divergent interpretations to coexist and enabling diverse groups to work together" (Eisenberg & Witten, 1987; see also Davenport & Leitch, 2005, p. 1606; Eisenberg, 1984, p. 230; Eisenberg, 2007). Second, strategic ambiguity upholds privilege by "shielding the powerful" (Davenport & Leitch, 2005, p. 1606; Eisenberg & Goodall, 1997, p. 24). Third,

"strategic ambiguity is deniable" so that language that seems "to mean one thing" can, under strain, "seem to mean something else" (Davenport & Leitch, 2005, p. 1606; Eisenberg & Goodall, 1997.) Finally, strategic ambiguity "facilitates organizational change by enabling shifting interpretations of organizational goals" (p. 1606; see also Eisenberg & Witten, 1987; Eisenberg & Goodall, 1997, p. 24). These four attributes define the function of ambiguity in an organization and show why ambiguity in a democratic setting may be problematic.

Although approaches to ambiguity as a resource have not been explored in a democratically managed organization, research points to the tension between ambiguity as a struggle for consensus, a potential method for redirecting ethical responsibilities, and as a resource for building consensus among various stakeholders for collective action (Davenport & Leitch, 2005; Eisenberg, 1984; Jarzabkowski, Sillince, & Shaw, 2010; Paul & Strbiak, 1987). Most notably, strategic ambiguity is often reserved for abstractions like mission statements or declarations of company values and goals, statements where higher-order agreement is needed without limiting details.

Method

For this IRB-approved study (14.301), I researched communicative practice in a democratically operated cooperative bar for two years, guided by the following research questions:

1. What are the differences and similarities in writing practice between a conventional business and a democratic business like a cooperative?
2. Do TPC concerns like ambiguity and clarity emerge and function differently in a democratic business than they do in a conventional business?

Answering these questions is important for least two reasons. First, this research will begin to fill the gap of scant research on rhetorical practice in democratic businesses. Second, considering the recent turn toward social justice in TPC (Agboka, 2013; Agboka, 2014; Colton & Holmes, forthcoming; Colton & Walton, 2015; Jones, 2016; Jones, Moore, & Walton, 2016; Walton, Colton, Wheatley-Boxx, & Gurko, 2016) and because writing is key to good organizational practice, researchers and practitioners may consider offering support to democratically owned businesses.

Avery C. Edenfield

Cooperatives are one strategy marginalized communities have used for self-advocacy, "economic defense," and "collective well-being" (Gordon Nembhard, 2014, p. 1). Such community-embedded organizations are rich sites for technical communicators to conduct mutually beneficial research projects and to enact social justice.

I conducted my research in three phases over a two-year period, from 2014–2016. First, for about six months, I conducted secondary and background research, selected a site, and recruited participants. Second, for the next six months, I collected data. Finally, I conducted analysis and disseminated my research. As with any study, this article discusses one aspect of a larger project. Below, I discuss my research methods and methodologies in more detail.

Phase 1: Preliminary Research, Site Selection, and Recruitment

In Phase 1, I began preliminary research on U.S. cooperative theory and practice. I collected and reviewed regulatory and other organizational documents from U.S. cooperative websites and then analyzed this documentation through research on strategic ambiguity and genre theory. I also observed two cooperative conferences coinciding with my study, one in Madison, WI, and one in Chicago, IL. My preliminary research focused on U.S. cooperatives with a commitment to workplace democracy and shared ownership. I excluded non-U.S. cooperatives, large agricultural cooperatives, energy cooperatives, large consumer cooperatives, traditional organizations with an employee stock ownership plan (ESOP), and other cooperatives that did not express a commitment to workplace democracy or shared management.

Site I identified Owen's House Cooperative as a prime location to study democratically managed organizations for a number of reasons. Because it was a relatively new cooperative, many of its founders continued to be involved either as employees, board members, or volunteers. Additionally, they had created and were willing to share documentation dating back years. Most importantly, unlike other cooperatives in the area, Owen's House was operated through shared management by the Board of Directors and the staff. This business was designed from its founding as a democratically managed operation.

Choosing a pub as a site of investigation of communicative practice required broadening my understanding of what TPC research does and who it is for. I understand Owen's House as a legitimate site for research for at least two reasons. First, work by TPC scholars has shown extra-institutional communication as a legitimate and complex area of research (Bushnell, 1999; Johnson-Eiola, 2004; Kimball, 2006). As Berlin (1988) argued, research is "always already ideological" (p. 477; see also Alvesson, 1991; Blyer, 1995; Harrison, 1994; Herndl, 1991, 1993), including what sites researchers hold as legitimate (Harrison, 1994, p. 248).

Although many researchers acknowledge that bureaucratic arrangements are not the only form of organization, research "nevertheless appears to take the model for granted" (Harrison, 1994, p. 249). Research that includes non-expert sites—where ordinary people produce documents for the exchange of technical information—acknowledges a broader understanding of how people communicate (Kimball, 2006). An in-depth study of a democratically managed organization may necessitate broadening our scope to alternative organizations. Secondly, and related to the first point, the people of Owen's House understood that what they were building was first and foremost a political project and a backdrop to their mission of community development (Bylaws, 2011). Owen's House was designed to be a community space serving a neighborhood (Sean, personal communication, June 24, 2014; Patty, personal communication, July 14, 2014). One founder, Patty, said that Owen's House was founded in the tradition of European public houses renowned for political organizing. Another founder, Sean, described Owen's House as "more than a bar." That Owen's House was a political project is an important detail because the founders were motivated by democratic commitments and community relationships, rather than profit or other entrepreneurial motives.

Per bylaws and original documents, Owen's House was designed to be a hybrid structure, merging a consumer and employee cooperative (Bylaws, 2011). In a consumer cooperative, owners of the cooperative are users who buy shares and are entitled to voting rights and discounts or dividends (Gordon Nembhard, 2014, p. 3). In contrast, in an employee cooperative, the workers themselves own all the shares, sit on the Board of Directors, and control the business (Gordon Nembhard, 2014, pp. 3–4). Opening as a consumer cooperative gave Owen's House founders access to start-up capital without going into debt while operating

The Burden of Ambiguity

as an employee collective harmonized with their commitment for shared governance (Patty, personal communication, July 14, 2014). Management at Owen's House consists of the Workers Collective and the Board of Directors, the latter bearing fiduciary responsibility. The Workers Collective is a group of 10-20 employees, many of whom actively participate in making decisions. Originally, the Workers Collective included four leadership positions called "auxiliary positions," described in Table 1 (Job Descriptions & division of labor for the [Name Redacted] Workers Collective; Introduction to Workers Collective, 2012).

Table 1. Auxiliary positions in the workers collective

Auxiliary Position	Role and Responsibilities	Accountable to
Lead Bartender	Act as pseudo-manager	Board of Directors/ Workers Collective
Inventory Coordinator	Maintain proper inventory levels	Board of Directors/ Workers Collective
Event Coordinator	Recruit and manage events	Board of Directors/ Workers Collective
Financial Coordinator	Manage finances and payroll	Board of Directors/ Workers Collective/ Special Finance Committee comprised of select Directors

The Workers Collective and auxiliary positions were responsible for the daily operations of the bar (Bylaws, 2011). In addition to interfacing with consumer-owners and the community, the Collective worked with the Board of Directors, a group of nine members who decided on larger issues including budgets, large spending projects, and community relations (Bylaws, 2011). State law dictates a Board's responsibilities, as a cooperative's Board of Directors is legally accountable "for the co-op's continued viability" and answers to the consumer-owners (Zeuli & Cropp, 2004, p. 50). Consumer-owners meet once a year at an Annual General Meeting with the Board of Directors and Workers Collective.

Recruitment

I recruited past and present employees, volunteers, and board members. I recruited on site in March 2014 using a variety of methods: presenting my potential

research project in meetings of the Workers Collective and Board of Directors and emailing past Owen's House participants whose names were given to me by current participants. Consent was obtained on site during one week in April 2014 or, in the case of former members, prior to the interview.

Phase 2: Data Collection

In the second phase of my study, I collected data through artifact collection, observation, and interviews.

Artifact collection

Pursuant of my research questions and my assumption of written communication as critical to operations (especially in a democratically managed organization), I solicited artifacts from participants related to workplace communication and project management, collaboration, information sharing, and training. I also requested artifacts dating back to the founding of the organization. Collected artifacts included meeting notes from the Workers Collective and Board of Directors, project to-do lists, emails, text messages, training documentation, bylaws, handbooks, inventory lists, event notes, and screenshots. Most artifacts were in digital form on Google Docs, which could be easily shared. To ensure the privacy of others, participants were invited to redact personal identifying information from the artifacts before turning them over to me.

Observation

With participants' consent, I observed multiple meetings of the Board of Directors and Worker Collective, as well as two special sessions. The sessions I observed included:

- Bi-weekly staff meetings where the day-to-day decisions were made
- Monthly (or bi-weekly) meetings of the Board of Directors
- Emergency special sessions during the financial and personnel crisis.

These last meetings were convened to tackle the previously mentioned crisis (Special Finance Meeting, 2014 April 6) and a small number of meetings of volunteers who crafted the Workers Collective response to the crisis (Leadership Meeting, 2014 April 16). In each of these meetings, I took detailed notes on the verbal and nonverbal communication between

Avery C. Edenfield

participants and paid special attention to the way texts were cited, reviewed, or otherwise operationalized.

Interviews

To gain insight into people's motives, histories, and activities at Owen's House, I conducted five interviews with past and present staff and members of the Board of Directors, conducted over a five-month period. Interview participants were chosen if they were over 18 and met at least one of the following criteria:

- Employed by Owen's House for longer than one year
- Involved in some facet of management
- Involved in the early developmental stages of the bar.

Interviewees featured in this article—Sean, Patty, Levi, Lucas, and Robert—met all three criteria. Interviews were audio-recorded and transcribed for analysis. Each interview began with a series of pre-written questions, including asking about past and present decision-making processes, the collaboration process, and the exigence of the texts that had been collected. Regarding the composition and institution of texts, I was especially interested in learning more about authorship and context, and about the composing process itself, e.g., did participants collaborate on the document, or was there a single author who disseminated a text for feedback and revisions? Were documents adopted whole cloth or was there a revision process? Answering these questions would help to understand how participants navigated ambiguity in their communication.

Phase 3: Analysis

In my analysis, I looked for patterns and dissonance between/among artifacts and participants, paying special attention to areas of ambiguity in the documents and how participants navigated that ambiguity in their interactions. Interview transcripts were analyzed alongside various genres using rhetorical analysis (Jarzabkowski, Sillince, & Shaw, 2010). A rhetorical analysis allows an examination of the consequences of the texts and contends that group behavior is delimited temporally through genres, understood by many contemporary rhetoricians as typified social responses to typified social situations (Miller, 1984; Winsor, 2003, 2007). As such, genres are a powerful stabilizing tool or, as Schryer says, "stabilized-for-now" as the genre and its effects are always in flux (1994; Winsor, 2007, p.

3). That is, a rhetorical analysis of a genre would focus more on its affordances (what actions does this genre allow/disallow?) rather than its taxonomic features. To understand how a text becomes a genre and how ambiguity affects its use, we can look at what situations those texts respond to. If these generic texts render relationships stable and help to regulate actions of heterogeneous work groups (Devitt, 1992; Miller, 1984; Winsor, 2007), then it may be important to understand how ambiguity either supports or undermines that work.

Consistent with qualitative, action, sociocultural, and ethnographic research methods in workplace writing studies, I was both an observer of and participant in my research site (Doheny-Farina, 1993; Berlin, 1988; Clark, 2006; Herndl, 1991, 1993; McNely, Spinuzzi, & Teston, 2015; Spinuzzi, 2005; Walton, Zraly, & Mugengana, 2015). All researchers "participate in the activities they articulate and in the articulation of those activities" (Clark, 2006, p. 164). Even our "presence alone" can affect what participants say and do (Doheny-Farina, 1993, p. 255). In my case, my participation was further complicated, because I was hired by Owen's House, joining the Workers Collective in 2012. In May of 2013, I was elected in a blind vote by members and colleagues to serve on the Board of Directors. TPC scholarship has shown that all researchers are implicated in and participate in their research sites and that no researcher is ever a neutral observer (Clark, 2006; Doheny-Farina, 1993; Herndl, 1991). Nevertheless, being an embedded researcher came with affordances and constraints. Being embedded allowed me to not only look at the texts they produced and used but also to gain understanding in their cultural frames, community norms, and other aspects of writing culture in ways I could not have accessed otherwise.

My position as a researcher and a member of the Collective and Board challenged my relationship with my coworkers and co-directors in at least two ways. First, they trusted me, and my excitement for the project in its early stages may have encouraged them to share information with me they may not have otherwise shared. Their trust in me led to ethical quandaries, such as how to faithfully represent personal conflicts among staff or board members, if or when to redact information when participants refused or neglected to, or how to convey the seriousness of my project to them when I was both one of them and an observer of their work (Clark, 2006, p. 164.). One way I dealt with these issues was

The Burden of Ambiguity

to regularly remind participants of their rights in the project, that they may speak off the record or withhold documents from the study, and that others would be reading the work I was producing. Second, because of my relationship with participants, the fragility of the new business, and the tenuous position of cooperatives as an alternative economic model for marginalized communities, critique was sometimes difficult. To deal with this problem, I sometimes shared preliminary findings to solicit feedback. Anonymizing the data, I also discussed my findings or critiques with trusted colleagues and experienced cooperative organizers whose comments on the project were invaluable.

Strategic Ambiguity at Owen's House

Many organizations purposefully practice ambiguity to foster a "unified diversity, to gain buy-in from various stakeholders with diverse—and possibly even competing—values, motives, and goals, and to allow for flexibility and contingencies (Eisenberg, 1984, 2007; Eisenberg & Witten, 1987; Jarzabkowski, Sillince, & Shaw, 2010; Paul & Strbiak, 1997). However, for democratic organizations where 1) documents replace hierarchy as an organizational framework, and 2) a myriad of actors have a say in the writing and execution of a text, even regulatory documents like bylaws, codes of conduct, or handbooks must achieve a balance between ambiguous and prescriptive. In the case of Owen's House, I found strategic ambiguity extended into texts intended for regulating behavior. That is, the need for prescriptive rules and meaningful regulatory documents were balanced with the need for diplomacy and consensus among members who equally shared decision-making power. This need for ambiguity is imperative, because, unlike a conventional organization where precision and clarity are key, ambiguity forced ongoing negotiations of meaning, in line with their democratic commitments outlined above. This unique writing strategy may problematize the assumed need for clarity.

Nevertheless, ambiguity was not always benign and in fact created trouble for an already tenuous organization. Despite the way ambiguity allowed diversity among participants (Eisenberg, 1984), I also found ambiguity placed a unique strain on documents. Specifically, key organizational documents of job descriptions and the bylaws became the focus of tensions between ambiguity and precision, resulting

in a significant crisis and, ultimately, a reorganization of the business. The crisis and resolution demonstrate that ambiguity can be both dysfunctional and a tool for organizational change.

Crisis

In April 2014, a personnel and financial emergency threatened to close Owen's House, brought on in part by ambiguous job descriptions, lack of clear oversight, and vague divisions of labor (Lucas, "A Couple of Issues…"; Special Finance Meeting, April 4, 2014). Acting lead bartender, Lucas reported that duties crucial to solvency were handled redundantly or, sometimes, not at all. In meetings and in correspondence, participants reported that three of the four auxiliary positions in the Workers Collective—Lead Bartender, Inventory, and Finance—were misaligned with other positions. This incongruence resulted in misinterpretation of their vague job descriptions, or, for reasons beyond the scope of this article, not completing their duties at all. At an emergency meeting of the Board of Directors, and then in an open meeting with employees and staff, the group consented to a re-organization of management (Board of Directors, April 12, 2014; Special Finance Meeting, April 4, 2014). Working collaboratively and through long hours, the Board of Directors and the Workers Collective resolved the crisis in two ways. First, to address dysfunctional ambiguity, job descriptions were revised in service of an arrangement that consolidated positions into a team of two co-managers. These two positions would oversee business operations through clearly delegated job responsibilities (Leadership Meeting, April 16, 2014; Divvyed Job Descriptions). Second, capitalizing on the affordance of flexibility that strategic ambiguity allowed, bylaws came to be interpreted in service of this new arrangement (Special Finance Meeting, April 4, 2014).

Job Descriptions: Revised for Precision

Members recognized ambiguous job descriptions as a critical failing point (Special Finance Meeting, April 4, 2014). This problem is to be expected as delineating initial roles and responsibilities for positions was a significant struggle for the new cooperative as founders sought to strike a balance between their need for structure and their democratic commitments. Those involved in the earliest stages were divided on how the workforce should be structured. According to

interviews, because they were ideologically opposed to top-down management, they struggled with defining the work and creating roles and responsibilities for themselves while maintaining their commitment to shared management (Levi, Robert, Patty). The creation of the Workers Collective in the bylaws was a step toward realizing their ideological commitment of shared management (Sean; Bylaws, 2011). The group's first demarcation of job responsibilities, "Job Descriptions & division of labor for Owen's House Workers Collective," especially the important position of lead bartender, is evidence of how the document sought to strike a balance between regulation and autonomy. The one-page document lists responsibilities, expectations, and requirements of the job.

Figure 1. Job descriptions & division of labor for Owen's House Workers Collective

Shown in its entirety, this list of conventional managerial duties reflects a concern to incorporate some of the necessities of such a position; however, overall, the document is vaguely worded (see, for example, "have some skills as a manager" and the title "Lead Bartender"). The authors also placed limits on that authority through phrasing like "in the most nonhierarchical way," "act as a role model," and "commitment to participating in a

Workers' Collective management employment setting." Noticeably missing are any consequences, quantifications of the expectations or job duties, mechanisms of review or oversight by the Board of Directors, or a clear delineation of how this job would interface with other positions. Rather, this description demonstrates concerns for how participants' writing reflected their democratic commitments and shaped the structure they were building together, even if it folded in rather conventional and even hierarchical bar manager activities, marked by words like "enforce" and "evaluate." Similar to the description for lead bartender, all job descriptions were designed to be nimble. The expressed intention behind the ambiguity was that the person occupying the position would govern their duties in response to changing organizational needs and contexts, and that this person would be in constant conversation with others (Patty).

Nevertheless, over time, the lack of clarity of how positions interfaced with each other became a greater problem. For example, by the time of the crisis, both the financial officer and the lead bartender began to cover the same duties (Board of Directors, April 12, 2014). The inventory coordinator, finance coordinator, and lead bartender redundantly handled inventory and bookkeeping (Special Finance Meeting, April 6, 2014). Thus, some bills went unpaid because, although it was clear who was supposed to pay the bills, it was not clear who was ultimately responsible for making sure payment was made (Board of Directors, April 12, 2014; Lucas, "A Couple of Issues…"). When the job description for lead bartender clashed with material conditions, the document failed in perhaps unexpected ways. Because of ambiguity in the original description, the person filling the role had to do significant interpretation on his or her own of what was expected of him or her.

In response to the crisis, Owen's House's resolution consolidated the lead bartender, inventory, and financial positions into two co-managers: a Front-of-the-House (FotH) position who would manage the "front-facing" aspect of the business (staff training, inventory, aesthetics, vendor relations, and other concerns) and a Back-of-the-House (BotH) position who would manage finances and other concerns that took place outside of customers' view (Leadership Meeting, April 16, 2014). Working together, workers

The Burden of Ambiguity

who had previously held those positions re-wrote their own job descriptions and clearly outlined duties for each position (Special Finance Meeting, April 6, 2014). Below is a short excerpt of the expanded job description of FotH, now a five-page document with clearly delineated job duties and responsibilities for each position. For example, whereas in the old description, the lead bartender was vaguely tasked with "overseeing the bar as a whole," the new description clearly outlined the perimeters of oversight for this position.

Front of the House-Primary duties, unshared

- Organize deep clean
- Menu/signage/chalkboard
- HR issues
- Emails
- Interviews/HR
- Outside event coordinating
- Draw up lists of orders for liquor, beer
- Fill our inventory forms
- Go to co-op for delivery order
- Pizzas
- Beef Sticks
- Point person w/ distributors
- Point person about infrastructure, fixing taps
- Point person for Everything else
- Organizing liquor room ▮▮▮
- Communicating with distro/liquor companies-events
- Stewardship of park
- More structured shifts/specific daily duties for all pos.
- Maintain staff log
- Timeliness, shift performance, evaluation
- Par sheets for all inventory
- Drink recipe book
- Advertise our quality products/cost
- Better relationships-shmooz-w/ liquor companies
- Products
- Events
- Social Media/website consistency
- Consistency in pricing
- Consistency in training: pricing
- Consistency in training: making drinks
- Menu changes
- Inventory changes
- Larger retraining
- Door scheduling
- Cleaning scheduling
- PR: printing
- PR: graphics get done in timely manner
- PR: everything done according to ▮▮▮ expectations
- PR: ensure poster distros getting done

Figure 2. Leadership meeting-divvyed job descriptions, updated 4.26.14

The authors substituted ambiguity with precision, clearly demarcating responsibilities for each position and specifying how they would report to each other and to the Board. In a move from all-hands-on-deck management, the new positions would visibly act as a diarchy. Consolidating the positions centralized decision-making power and expanded FotH and BotH oversight over other workers. Therefore, the new job descriptions fell into tension with the concept of broad participation in management activities. Whereas the lead bartender was understood as a worker among workers, FotH and BotH were understood as supervisory positions (Board of Directors, April 26, 2014). In that same meeting, Will explained the new positions as "enforcers," saying "Workers collective has no shortage of great goals and great ideas, but where we need the GMs [general managers] is to enforce these. Workers Collective decides the what, and the GMs decide the how" (Board of Directors, April 26, 2014). Although the new structure resolved the problems engendered by ambiguity, this structure represented a move away from collectivity to a tandemocracy (Hale, 2009) and put their most foundational documents in jeopardy, namely their bylaws.

Bylaws: Reinterpreted for Change

In Owen's House's home state, the statute establishing the legal existence of a cooperative requires the creation of bylaws by a proto-Board of Directors. After the cooperative is established, bylaws can be changed by a member vote, a procedure outlined in state statute. For Owen's House, as with many cooperatives, bylaws were one of the first documents created and represent one of the earliest compromises by the newly formed organization.

Bylaws are significant documents for at least three reasons. First, they define the organization's mission, trajectory, and internal structure (Hampton). Second, bylaws are legal documents that inaugurate the cooperative at the state level. For the organization to legitimately exist and to participate in all the legal activities required for operation (e.g., obtaining a license, workers compensation, and insurance), these documents must be crafted and authorized by the state. Third, Owen's House's bylaws established the creation of the Workers Collective, representing a first step toward manifesting organizers' shared value of collective management (Bylaws, 2011).

Avery C. Edenfield

Owen's House's bylaws had a material, constant presence in the cooperative. I observed bylaws being turned to again and again whenever there was a dispute over an interpretation. For example, in one meeting of the Board of Directors, a director reminded the Board that the bylaws stated a person for a specific role had to be a member of the Board (Board of Directors, July 22, 2014). In another meeting (Board of Directors, May 13, 2013), the bylaws were consulted when considering how many members of the Workers Collective could hold a seat on the Board. But the most significant test of the bylaws came in re-organization and installation of the two co-managers.

The second article, the "Statement of Purpose," defines the cooperative's purpose. Owen's House

> . . . seeks to uphold cooperative standards of democracy, equality, self-responsibility, equity and solidarity and strives to operate in accordance with the values of collective worker management, living wages, strong community involvement, safe environment, responsible drinking and local products. (Bylaws, 2011)

In a clear example of strategic ambiguity, the authors refrain from defining precise meanings of fraught terms like "equality," "self-responsibility," "collective management," or "safe environment," and instead allow meaning to be determined in context. Leaving key terms to interpretation allowed for a unity around their organizational mission and created a framework for coordinated action.

The re-organization of the auxiliary positions as a result of the crisis highlighted the tension between ambiguity operationalized as unified diversity and ambiguity leading to dysfunction. During the transition, the implication of the term "collective management" was fiercely debated. Related to this conflict, directors discussed whether a change was in line with the "values" of collective management and how that value could be realized in the new positions (Board of Directors, April 6, 2014). Directors identified the necessity of updating the bylaws to reflect the organizational changes they were considering and thus the need to make these changes transparent to member-owners, as bylaws could only be changed through member vote (Special Finance Meeting, April 6, 2014; Board of Directors, April 26, 2014). However, rather than changing the bylaws through a vote, eventually, bylaws became reinterpreted in light of new organizational needs. That is, they came to be read as "supporting collective management," and the placement of two co-managers came in line with this view of collective management. The changes were never officially recorded, but rather, over time, the bylaws were interpreted in a different manner than before, in service to new organizational needs, and as supporting collectivity in the abstract sense rather than a literal interpretation.

Both the bylaws and the job descriptions capitalized on strategic ambiguity. To recall, Eisenberg identified four traits of strategic ambiguity:
1. Fosters unified diversity
2. Maintains privilege by "shielding the powerful" from examination
3. Upholds deniability
4. "Facilitates change by enabling shifting interpretations" (Davenport & Leitch, 2005, p. 1606; Eisenberg, 1984, 2007; Eisenberg & Goodall, 1997; Eisenberg & Witten, 1987).

Initially, the job descriptions bore the first trait, but they became dysfunctional by not defining limits to each job. Rewriting the documents for precision and eliminating ambiguity was an exercise in putting forth a specific interpretation rather than allowing the person who held the job to interpret their position per changing needs. Bylaws, however, embodied traits one and four as they used ambiguous language to impose a needed change and obtain the consent of those involved by allowing for multiple interpretations of the word "collective." Ambiguity in the bylaws strategically enabled the Board to act quickly to enact a change that may have ultimately saved the business.

Conclusion and Implications

When building unified diversity, democratic organizations must carefully consider the consequences of textual ambiguity. That is, documents need to be not only flexible enough to adapt to changes but also defined enough to avoid sliding into dysfunction. At Owen's House, ambiguity caused confusion among workers' duties yet created a path to solvency, enabling the organization to be nimble in response to a crisis.

The Burden of Ambiguity

Implication 1: Notes Toward Articulating a Theory of Strategic Ambiguity in a Democratic Workplace

This study is a starting point toward articulating a theory of how strategic ambiguity may function in a democratically managed workplace. Though documents in a democratic organization may look like those created by a conventional organization, they may function quite differently. In the absence of a primary decision-maker or a hierarchical structure, regulatory texts act as a framework for the organization. Therefore, these jointly written governing texts balance ambiguity and precision. In such a unique workplace, ambiguity is not always benign and can either be debilitating or constructive. This study points to three factors that may play a critical role in determining whether ambiguity is destructive or constructive.

The individual vs. the collective

Successful use of strategic ambiguity may be determined by whether the language is prescribing action for the individual or the collective. Used to guide the collective, ambiguous documents like bylaws encouraged conversations and concerted action on behalf of the organization, fostering unity among diverse goals and motives. Used to guide individual behavior, however, ambiguity afforded for multiple interpretations which eventually led to unmet responsibilities.

Abstract vs. concrete

Another determinant of the successful use of ambiguity is whether the language is describing the abstract or the concrete. In documents that addressed abstractions like mission statement and values, i.e., those intended to guide decision-making, ambiguity was successful in allowing for flexibility and change. In documents that were intended to be concrete and actionable, e.g., those that measured whether an individual was following guidelines, ambiguity slid into dysfunction. Nevertheless, on a small scale, like Owen's House when it first opened, some ambiguity in job descriptions may be desirable to allow for adaptation in a growing organization.

Scale

In a small organization (such as a start-up, small nonprofit, or community organization), flexible job descriptions may be a successful strategy. For example, in the case of the original descriptions at Owen's House, people were engaged in weekly or even daily conversations about the shape of the business. Employees adjusted their roles according to changing organizational needs. However, as the organization grows, turn-over occurs, or communication breaks down, more specificity may be needed to ensure roles and responsibilities are consistently fulfilled.

Implication 2: Ambiguity in Regulatory Documents Challenges the Assumed Role of Clarity

Another consequence of this study is that it upends assumptions about clarity in documents that structure and regulate organizational behavior. That is, the calculated deployment of ambiguous language in regulatory documents tests the assumed requirement of clear and precise language, a nearly ubiquitous assumption in TPC education, practice, and research. A precisely worded and prescriptive document often requires a unanimous, solitary interpretation. Because it operates through consensus, this kind of unanimity may be difficult if not impossible to achieve in a democratically managed business. This kind of unanimity may be difficult to achieve in other types of organizations as well, especially during the nascent stage. Nevertheless, as in the case of Owen's House, certain documentation must be created in order to be incorporated. A careful use of ambiguity could be a tactic for constructing the organization, if only temporarily. Still, this tension between the need for consensus and the need for regulatory documents requires more research, especially within the context of alternative organizations.

My project demonstrates that there is still much to learn about these organizations and the way they write and enact documentation. For instance, what TPC approaches could be useful for writing successful technical documents within these unique configurations of power? With the social justice turn in TPC scholarship (Agboka, 2013; Agboka, 2014; Colton & Holmes, 2016; Colton & Walton, 2015; Jones, 2016; Jones, Moore, & Walton, 2016), how can TPC scholars better understand and provide support to the important democratic work these kinds of organizations are doing? What can more traditional organizations learn from the way these firms write and implement documentation, and vice versa? Democratic firms may provide new terrain for exploring TPC in marginalized sites. These

organizations may contest assumed TPC goals and values. Owen's House challenges the ubiquitous value of clarity. Intentionally embedding ambiguity into documents may be a way for such flat organizations to strategically adapt to challenging situations and grow into successful businesses. In a democratic organization, though documents may look conventional, the processes through which they are created, used, and revised may be very different, and there may be much for us to learn.

References

Agboka, G. (2013). Participatory localization: A social justice approach to navigating Unenfranchised/disenfranchised cultural sites. *Technical Communication Quarterly*, *22*, 28–49.

Agboka, G. (2014). Decolonial methodologies: Social justice perspectives in intercultural technical communication research. *Journal of Technical Writing and Communication*, *44*, 297–327.

Alvesson, M. (1991). Organizational symbolism and ideology. *Journal of Management Studies*, *28*(3), 207–226.

Berlin, J. (1988). Rhetoric and ideology in the writing class. *College English*, *50*(5), 477–494.

Blyler, N. R. (1995). Research as ideology in professional communication. *Technical Communication Quarterly*, *4*, 285–313.

Clark, D. (2006). Rhetoric of empowerment: Genre, activity, and the distribution of Capital." In Ed. M. Zachry and C. Thrall (Eds.), *Communicative practices in workplaces and the professions: Cultural perspectives on the regulation of discourse and organizations* (pp. 155–179). Amityville, NY: Baywood.

Cheney, G. (1995). Democracy in the workplace: Theory and practice from the perspective of communication. *Journal of Applied Communication*, *23*, 167–200.

Colton, J., & Holmes, S. (Forthcoming). A social justice theory of active equality for technical communication. *Journal of Technical Writing and Communication.*

Colton, J. S., & Walton, R. (2015). Disability as insight into social justice pedagogy in technical communication. *Journal of Interactive Technology and Pedagogy*, *8*. Retrieved from https://jitp.commons.gc.cuny.edu/disability-as-insight-into-social-justice-pedagogy-in-technical-communication/

Contractor, N. S., & Ehrlich, M. C. (1993). Strategic ambiguity in the birth of a loosely coupled organization: The case of a $50-million experiment. *Management Communication Quarterly*, *6*(3), 251–281.

Craig, B., & Pencavel, J. (1995). Participation and productivity: A comparison of worker cooperatives and conventional firms in the plywood industry. *Brookings Papers: Microeconomics*, 121–174.

Davenport, S., & Leitch, S. (2005). Circuits of power in practice: Strategic ambiguity as delegation of authority. *Organization Studies*, *26*(11), 1603–1623.

Devitt, A. J. (1991). Intertextuality in tax accounting: Generic, referential, and functional. In Charles Bazerman and James Paradis (Eds.), *Textual dynamics of the professions* (pp. 336–348). London, UK: Board of Regents of University of Wisconsin System.

Doheny-Farina, S. (1993). Research as rhetoric: Confronting the methodological and ethical problems of research on writing in nonacademic settings. In R. Spilka (Ed.) *Writing in the workplace: New research perspectives*, 253–267.

Eisenberg, E. M. (1984). Ambiguity as strategy in organizational communication. *Communication Monographs*, *51*(3), 227–242.

Eisenberg, E. M. (1994). Dialogue as democratic discourse. In E. M. Eisenberg (Ed.) *Strategic ambiguities: Essays on communication, organization, and identity* (pp. 118–128). Thousand Oaks, CA: SAGE.

Eisenberg, E. M. (2007) *Strategic ambiguities: Essays on communication, organization, and identity.* Thousand Oaks, CA: SAGE.

Eisenberg, E. M., & Goodall, H. L. (2001). *Organizational communication: Balancing creativity and constraint.* Boston, MA: Bedford/St. Martin's.

Eisenberg, E. M., & Witten, M. G. (1987). Reconsidering openness in organizational communication. *Academy of Management Review*, *12*(3), 418–426.

Faber, B. D. (2002). *Community action and organizational change: Image, narrative, identity.* Carbondale, IL: Southern Illinois University Press.

Fakhfakh, F., Perotin, V., & Gago, M. (2009). Productivity, capital and labor in labor managed and conventional Firms. *Document de travail Ermès*.

The Burden of Ambiguity

Gee, J., Hull G., & Lankshear, C. (1996). *The new work order: Behind the language of new capitalism*. Sydney, Australia: Westview.

Gordon Nembhard, J. (2014). *Collective courage: A history of African American cooperative economic thought and practice*. University Park, PA: Pennsylvania State UP.

Hale, H. E., et al. (8 September 2009). Russians and the Putin-Medvedev "Tandemocracy": A Survey-Based Portrait of the 2007-08 Election Season. *The National Council for Eurasian and East European Research*, Seattle, University of Washington.

Hampton, C. (n.d.). Section 7. Writing bylaws. *Community Tool Box*. Retrieved from http://ctb.ku.edu/en/table-of-contents/structure/organizational-structure/write-bylaws/main

Harrison, T. (1994). Communication and interdependence in democratic organizations. *Communication Yearbook*, *17*, 247–274.

Herndl, C. G. (1991). Writing ethnography: Representation, rhetoric, and institutional practices. *College English*, *53*(3), 320–332.

Herndl, C. G. (1993). Teaching discourse and reproducing culture: A critique of research and pedagogy in professional and non-academic writing. *College Composition and Communication*, *44*, 349–363.

Jarzabkowski, P., Sillince, J. A., & Shaw, D. (2010). Strategic ambiguity as a rhetorical resource for enabling multiple interests. *Human Relations*, *63*(2), 219–248.

Johnson-Eilola, J. (1996). Relocating the value of work: Technical communication in a post-industrial age. *Technical Communication Quarterly*, *5*, 245–270.

Jones, N. (2016). The technical communicator as advocate: Integrating a social justice approach in technical communication. *Journal of Technical Writing and Communication*, *46*, 342–361.

Jones, N., Moore, K., & Walton, R. (2016). Disrupting the past to disrupt the future: An antenarrative of technical communication. *Technical Communication Quarterly*, *14*, 211–229.

Kastelle, T. (2013). Hierarchy is overrated. Blog. *Harvard Business Review*. November 20. http://blogs.hbr.org/2013/11/hierarchy-is-overrated/

Keyton, J. (2005). *Communication and organizational culture: A key to understanding work experiences*. Thousand Oaks, CA: Sage.

Longo, B. (2000). *Spurious coin: A history of science, management, and technical writing*. New York, NY: SUNY UP.

McNely, B., Spinuzzi, C., & Teston, C. (2015). Contemporary research methodologies in technical communication. *Technical Communication Quarterly*, *24*, 1–13.

Miller, C. R. (1984). Genre as social action. *Quarterly Journal of Speech*, *70*, 151–167.

Paul, J., & Strbiak, C. A. (1997). The ethics of strategic ambiguity. *Journal of Business Communication*, *34*, 149–159.

Pittman, L. (n.d.). *Cooperatives in Wisconsin: The power of cooperative action*. UW Center for Cooperatives.

Owen's House Cooperative. [Name redacted] cooperative bylaws. Ratified March 2011.

Owen's House Cooperative. (2013). [Name redacted] Board manual. Unpublished.

Owen's House Cooperative. (2012). Introduction to [Name redacted] Workers Collective. Presentation.

Owen's House Cooperative. (2012). Job Descriptions & division of labor for the [Name Redacted] Workers Collective; Introduction to Workers Collective.

Robertson, B. (2015). *Holacracy: The new management system for a rapidly changing world*. New York, NY: Henry Holt and Co.

Schryer, C. (1994). The lab vs. the clinic: Sites of competing genres. In A. Freedman and P. Medway (Eds.), *Genre and the new rhetoric* (pp. 104-124). London, UK: Taylor.

Spinuzzi, C. (2005). The methodology of participatory design. *Technical Communication*, *52*, 163–174.

Spinuzzi, C. (2013). *Topsight: A guide to studying, diagnosing, and fixing information flow in organizations*. Austin, TX: CreateSpace Independent Publishing Platform.

Spinuzzi, C. (2013). All edge: Understanding the new workplace networks. [PowerPoint slides]. Retrieved from https://www.slideshare.net/spinuzzi/all-edge-understanding-the-new-workplace-networks

Spinuzzi, C. (2014). How nonemployee firms stage-manage ad-hoc collaboration: An activity theory analysis. *Technical Communication Quarterly*, *23*, 88–114.

Spinuzzi, C. (2015). *All edge: Inside the new workplace networks*. Chicago, IL: UP.

The cooperative movement and the challenge of development: A search for alternative wealth creation

and citizen vitality approaches in Uganda (Dec. 2013). Published by The Uhruru Institute.

Walton, R., Colton, J. S., Wheatley-Boxx, R., & Gurko, K. (2016). Social justice across the curriculum: Research-based course design. *Programmatic Perspectives*, *8*(2), 119–141.

Walton, R., Mayes, R. E., & Haselkorn, M. (2016). Enacting humanitarian culture: How technical communication facilitates successful humanitarian work. *Technical Communication*, *63*, 85–100.

Walton, R., Zraly, M., & Mugengana, J. P. (2015). Values and validity: Navigating messiness in a community-based research project in Rwanda. *Technical Communication Quarterly*, *24*, 45–69.

Waterman, Jr., R. H. (1990). *Adhocracy.* New York, NY: Norton.

Williams, R. G. (2007). *The cooperative movement: Globalization from below.* Hampshire, UK: Ashgate.

Wilson, G. (2001). Technical communication and late capitalism: Considering a postmodern technical communication pedagogy. *Journal of Business and Technical Communication*, *15*, 72–99.

Winsor, D. A. (2003). *Writing power: Communication in an engineering center.* Albany, NY: SUNY

Winsor, D. A. (2007). Using texts to manage continuity and change in an activity center. In M. Zachry and C. Thrall (Eds.), *Communicative practices in workplaces and the professions: Cultural perspectives on the regulation of discourse and organizations* (pp. 3–20). Amityville, NY: Baywood.

Zachry, M. (2000). Communicative practices in the workplace: A historical examination of genre development. *Journal of Technical Writing and Communication*, *30*, 57–79.

Zeuli, K. A., & Cropp, R. (2004). *Cooperatives: Principles and practices in the 21st Century.* University of Wisconsin Extension Publication A1457. University of Wisconsin Center for Cooperatives.

Zuboff, S. (1988). *In the age of the smart machine: The future of work and power.* New York, NY: Basic Books.

About the Author

Avery C. Edenfield is an assistant professor of Technical Communication and Rhetoric at Utah State University. His research agenda works at the intersections of professional communication and community-embedded workspaces with specific attention to cooperatives, collectives, and nonprofits. His research interests include theories of participation, rhetorics of empowerment and democracy, and community engagement in professional communication. Avery's work has appeared in *Journal of Technical Writing and Communication* and *Nonprofit Quarterly*. He can be reached at avery.edenfield@usu.edu.

Interactivity in an Age of Immersive Media: Seven Dimensions for Wearable Technology, Internet of Things, and Technical Communication

Jason Chew Kit Tham

Abstract

Purpose: Interactivity in virtual environments has been a key area of investigation in fields ranging from technical to creative sectors. Scholars find a cross-disciplinary disparity on what interactivity embodies and accomplishes. This article traces the definitions of interactivity in existing research, devises seven dimensions of interactivity for wearables and IoT products, and identifies key roles for technical communicators in immersive media design.

Method: A research review of key literature on interactivity in general and technical communication and mobile technologies in particular.

Results: Current literature shows that concepts of interactivity in communication design and technology are multifaceted. Seven dimensions of interactivity can be derived for immersive media design: 1) reciprocity/ease of response, 2) synchronicity/context awareness, 3) connectedness/ubiquity/pervasiveness, 4) navigability/accessibility, 5) user control/personalization, 6) entertainment/sensibility, and 7) sensory stimulation/multimodality. These dimensions can be mapped onto the interactive design of wearables and IoT products. They also inform the roles of technical communicators in producing immersive technical communication.

Conclusion: Further investigation of the constructs in interactivity can help uncover a more accurate relationship between interactivity and its dependent variables. The new dimensions of interactivity in immersive media environments suggest that technical communicators and designers must pay attention to 1) the seamless connection between the user and the systems, data, and actions; 2) user control and customization; 3) proactive contextual assistance from smart technologies; and 4) device sensibility and sensory stimulations.

Keywords: interactivity, immersive media, wearable technology, Internet of Things

Practitioner's Takeaway:

- A cross-disciplinary disparity is evident in how we talk about interactivity. For immersive media like wearables and IoT products, this article recommends seven dimensions of interactivity suited to designing robust yet effective user experience in immersive environments.
- The roles of technical communicators are to understand the interactive dimensions for wearables and IoT communication, create interactive interfaces that are integrative and effective, and be a user advocate in legal and ethical issues.

Introduction

About 30 years ago, Rafaeli (1988) observed that "interactivity is a widely used term with an intuitive appeal, but it is an underdefined concept. As a way of thinking about communication, it has high face validity, but only narrowly based explication, little consensus on meaning, and only recently emerging empirical verification of actual role" (p. 110). Since then, the topic of interactivity in computer-mediated environments has been widely discussed across such fields of advertising, marketing, information design, and human-computer interaction studies (for overviews, see Kiousis, 2002; McMillan, 2002; Quiring & Schweiger, 2008; Gao, Rau, & Salvendy, 2009). Within the academic discourse, many different theoretical definitions and frameworks for analysis have been produced (Quiring, 2009).

However, amid the rapid advancement of technologies and new media—including the recent proliferation of wearables and Internet of Things (IoT) technologies—interactivity is still a nebulous concept due to the wide array of digital phenomena afforded by these new technologies (Liu, 2003; Kiousis, 2002; Quiring, 2009). Contrary to Rafaeli's (1988) observation, Quiring and Schweiger (2008) argued that interactivity is over-defined due to its different applications in the broad field of communication. The inconsistent usage of the term *interactivity* and its conceptualizations have complicated the replicability of empirical studies (Quiring, 2009), thus hindering scholars and practitioners in systematizing central characteristics of effective interactive design. This presents considerable problems to technical communicators working in the contexts of interface design and information architecture especially with the advent of wearables and the IoT, where interactivity is crucial to user experience and productivity.

The shift beyond visual or graphical user interfaces into voice user interfaces, such as those found in smart home assistants like Amazon's Alexa and Apple's Siri, presents new terrains for communication designers and developers in delivering information and engaging users on a new level. How does a voice-activated help system differ from a print- or screen-based user guide? How does navigation work on a screen-less user interface? How might technical communicators design information systems that would help users avoid undesired mistakes, like that unfortunate moment when Amazon Echo's Alexa "talked dirty" to a young boy because Alexa had misunderstood the child's query (see video: https://www.youtube.com/watch?v=F4MdPlJ2h_M)?

With multiple key technology companies developing innovative IoT products and making custom solutions and standards, we have seen "a plethora of closed vertical solutions, leading to a highly fragmented market" for immersive media[1] (Cirani & Picone, 2015, p. 35). The need to seek a common understanding of interactivity at a time of such fragmentation is therefore imperative to successful user experience and to preventing IoT technologies from reaching a dead end. This, however, doesn't mean that concepts of interactivity should be reduced to a single definition. Acknowledging the cross-disciplinary disparity in achieving interactivity, this article focuses on definitions and dimensions that are applicable to wearable technologies and IoT products. It maps out the existing conceptualizations of interactivity, devises new interactive dimensions, and identifies key roles for technical communicators in envisioning a future of immersive technical communication design. As a backdrop to the rest of the article, the following section offers a brief introduction to immersive technologies, including wearables and IoT products.

Immersive Media: Wearables and the Internet of Things

Recent developments in personal computing have made devices increasingly mobile and moved them closer to our bodies. Wearables, bio-implants, and other embodied technologies embed computational ability into objects we can carry on ourselves to perform tasks and track our behaviors (Pedersen, 2013). As interfaces, they seemingly minimize our interactions with computers. From activity trackers like Fitbit to smartwatches like the Apple Watch, wearable technologies change our interactive behaviors with screens as they typically come in small screens

---

1 I use "immersive media" to refer to a condition of technology whereby users are able to experience a sensation of being surrounded by a mediated reality. For the purpose of this article, immersive media include virtual, augmented, and mixed reality; embodied devices and applications such as wearable technology; as well as connections between smart objects enabled by the IoT.

Interactivity in an Age of Immersive Media

or with no screen at all. This presents a host of design challenges that are significant to the work of technical communicators and interface designers.

As wearables become more commonplace, tech giants like Microsoft, Google, Samsung, and Facebook have announced their commitments to innovating new human-computer interaction experiences, where the latest gadgets would promise immersive experiences for users of virtual and augmented reality technologies. Devices such as Oculus Rift and HTC Vive offer nearly full immersive experience for users by providing surrounding visual, audio, and tactile feedback through a head-mounted display and hand-held controls. Users might feel as though they were physically ported into a computer simulation, displacing their conventional perception of presence and reality. For example, the Microsoft HoloLens (see Figure 1), an augmented reality viewer and head-mounted computer, promises to reconstruct the way users find and use information and communicate with others. Google, known for its wide-ranging entrepreneurial spirit, has experimented with its own version of reality-augmenting eyewear—Google Glass—although it has been taken off the market since early 2015 due to market disinterest. Google continues to leverage its low-end virtual reality (VR) headsets today, namely the Google Cardboard and Google Daydream Viewer, as a way to build market demand for higher-spec VR in the near future (Sydell, 2017).

On top of these, the last few years have been the pivotal infancy stage for a new household technology called the Internet of Things (IoT). The IoT is both a concept and an infrastructure of technology (Greengard, 2015). Floris and Atzori (2015) defined IoT as "a network of interconnected objects which are able to acquire information from the physical world and to make this information available on the Internet" for users and machines alike (p. 1747). Essentially, the IoT is the idea that everyday objects and technologies can be digitized and connected to become a network of intercommunicating systems. Using sensors, radio frequency identification (RFID) or near-field communication (NFC), and Internet protocols, everyday things and devices can track data, search for information, and complete daily tasks with or without human involvement. Examples include artificial intelligence (AI) home assistants such as Google Home, Amazon Echo, and Apple HomePod, as well as smart home thermostats (see Figure 2), bulbs and lighting systems, door locks and security systems, autonomous vehicles (self-driving cars), pet feeders and planting watering systems, emergency responses systems, and even coffee brewers. These technologies are made to connect with the user's personal computer devices so they can be programmed to perform tasks on their

Figure 1. Microsoft HoloLens worn by Apollo 11 astronaut Buzz Aldrin, right and Erisa Hines of NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California. Photo credit: NASA/Charles Babir (public domain image retrieved from Wikimedia).
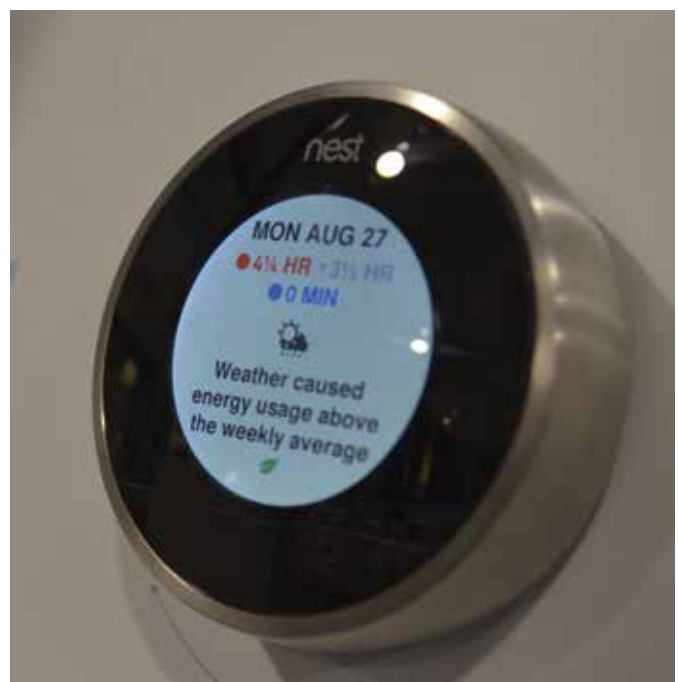

Figure 2. A Nest learning thermostat reporting on energy usage and local weather. Photo credit: Raysonho (public domain image retrieved from Wikimedia).

Jason Chew Kit Tham

own (hence they are "smart" technologies). Through RFID and NFC, these devices have the capability to automatically identify and track tags attached to objects (like other household appliances). These pieces of information can also be accessed by the user and could be used to help the user make decisions in the future. Unlike other digital-first gadgets, such as the smartphone and laptop computers, IoT devices have varying interfaces and are quickly transforming the way we interact with devices and information.

Across business, education, medical, creative, and technical industries, all of these new technologies have gained notable popularity for their ability to engage users at a level unprecedented by traditional print or 2D screen media. For this reason, they pose new challenges related to the way we communicate information and interact with one another. As communication designers, writers, and developers, technical communicators are tasked with creating user-centered interfaces for efficient interactive experience. At a time when many mainstream outlets[2] are experimenting with immersive media as means to communicate and work, we need to equip ourselves with current knowledge about interactivity and its emerging trends so we can better serve end users. We can start by understanding how interactivity is currently conceptualized across the diverse fields of communication. The following section briefly outlines the method by which relevant literature sources were selected and synthesized.

Method

This article follows a research review methodology with the intention to provide a conceptual explication that is useful for technical communication in the context of immersive experience design. It was inspired by Andrisani et al. (2001) and McDaniel's (2009) analyses of interactivity in *Technical Communication*. With the goal of continuing the conversation on the technical communicator's role in interactive design, I began with an exploratory literature review using keyword searches. As pointed out by Kiousis (2002), defining interactivity is "cumbersome" due to the "vast implicit and explicit" conceptions prepared with different academic and

professional perspectives (p. 357). To create a coherent corpus focused on the implications of interactivity for technical communication, I applied the criterion that every literature source included in the review must address interactivity explicitly in the context of mediated communication. This precondition ruled out literature on relational communication studies, classroom teaching practices, neuroscience, genome research, and biology.

To find articles in the technical communication and technology literature related to interactivity, I searched *Technical Communication*, MNCAT Discovery[3], and EBSCOhost databases. The most successful searches included the following key words:

- (technical communication) and (interactivity) or (interactive)
- (wearables) or (wearable technology) and (technical communication)
- (wearables) or (wearable technology) and (interactivity) or (interactive)
- (IoT) or (Internet of Things) and (interactivity) or (interactive)
- (IoT) or (Internet of Things) and (technical communication)

Besides *Technical Communication*, I also searched top technical communication journals such as *Journal of Business and Technical Communication*, *Journal of Technical Writing and Communication*, *IEEE Transactions on Professional Communication*, and *Technical Communication Quarterly* to ensure coverage of key literature. Using Google Scholar and the general Google search engine, I was able to find unpublished studies that provided contexts to the literature featured in this article. The publication date of the selected literature goes as far back as the time when interactivity in mediated environments was first discussed, which appears to be around the 1980s (for example, Hornik, 1984; Rafaeli, 1988).

Upon organizing key themes in the literature and determining the points of departure for this article (conceptualizations), I began a focused literature review to identify shared attributes within each point of departure and operationalized the conceptualizations

---

2 Examples include The New York Times *VR news storytelling (http://www.nytimes.com/marketing/nytvr/) and body-worn cameras used by law enforcement officers (https://www.nij.gov/topics/law-enforcement/technology/pages/body-worn-cameras.aspx).*

3 MNCAT Discovery features a combination of traditional library content search at the University of Minnesota along with publications from news media, e-books, and physical holdings that are not usually available on online academic databases and catalogs. For more details, see www.lib.umn.edu/about/mncat-discovery.

Interactivity in an Age of Immersive Media

to devise the dimensions of interactivity presented in this article. As a frame of reference, operationalization in this article refers to the process of creating specific attributes for a concept—i.e., interactivity—that can be observed and measured—e.g., user control (Kenny, Gorelik, & Mwangi, 2000). Specific to this study, these attributes or dimensions are linked directly to wearables and IoT products. It is important to consider these dimensions neither as exhaustive nor exclusive to immersive environments. They represent a range of possible measures for the concept of interactivity but do not limit it to these measures alone. These dimensions are then worked into practical guidelines for technical communicators in the conclusion of this article.

Defining Interactivity

An in-depth understanding of interactivity is of critical importance for those who analyze or develop technology-enhanced communications. Scholars in various fields of mass media, information, and computer science have conceptualized interactivity based on general characteristics and features available in the user interface. Indeed, some of these conceptualizations may seem foreign to those in technical communication given the variation in focus. Nevertheless, we can learn from these literature sources how interactivity is dealt with in specific contexts and genres, before extracting conceptualizations that are most relevant to technical communication and immersive media design. As an overview, Table 1 summarizes some key definitions of interactivity with emphases on advertising, marketing, and technology studies, from the pre-Web era to the current age of networked applications.

As observed in the studies summarized in Table 1, definitions of interactivity can be categorized based on the primary focus on process, features, perception, or the combination of these. Some researchers have defined interactivity as properties of a certain medium, either general characteristics like user control, two-way interaction, etc. (Steuer, 1992; Ha & James, 1998; Lombard & Snyder-Dutch, 2001; Schumann, Artis, & Rivera, 2001; Cho & Leckenby, 1999; Coyle & Thorson, 2001) or specific features such as multimedia functions and chat rooms (McMillan, 2000a; Ahren, Stromer-Galley, & Neuman, 2000; McMillan, 2002; Chou, 2003). Some researchers have focused on

process-related variables (Miles, 1992; Zack, 1993; Rafaeli & Sudweeks, 1997; Ha & James, 1998; Liu & Shrum, 2002). Others defined interactivity through the notion of perception, such as perceived control of communication and the sense of time and place (McMillan, 2000b; Milojevic, Kleut, & Ninkovic, 2013). These researchers—especially within the field of marketing communications—argue that interactivity should not be measured by analyzing the process of counting features but by observing how users perceive the interactivity during the communication.

Kiousis (2002) is noted for his attempt at explicating the theory of interactivity beyond user perception. By including major conceptualizations such as the structure of medium (Steuer, 1992) and the context of communication settings (Rafaeli, 1988) to the perceptions of users (Wu 1999), Kiousis defined interactivity as "the degree to which a communication technology can create a mediated environment in which participants can communicate, both synchronously and asynchronously, and participate in reciprocal message exchanges" (2002, p. 372). Kiousis admitted that the convergence—and I add, emergence—of new technologies continually blurs the boundaries between old and new media (p. 379), giving them new affordances and thus calling for a hybrid conception for interactivity.

Thus, more recent research has focused less on defining interactivity in isolation and instead investigating the concept of interactivity within various socio-technological contexts, such as Ariel and Avidar's (2015) study of interactivity and flow of information on social media. In their study, Ariel and Avidar argued that interactivity is an inherent attribute of communication (p. 24), and, thus, interactivity studies should concentrate on how technical and user-centered perspectives of interactivity are met in any given technological environment. Following the "hybrid" rationale, this article triangulates interactivity with technical communication and immersive media to identify characteristics of interactivity for these contexts.

Interactivity in Technical Communication

Evidently, conceptualization of interactivity in communication design and technology is a multifaceted and multidimensional construct. As noted earlier, the fuzziness in the definition of interactivity may come from the fact that interactivity is understood and operationalized differently across many fields. Table 1

Table 1. Summary of interactivity definition in the past 30 years.

Study	Definition of Interactivity	Domain
Rafaeli, 1988	Interactivity is an expression to the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions.	General communication theory
Miles, 1992	An interactive communication involves responsiveness of the displayed message to the message receiver.	Advertising and marketing
Steuer, 1992	Interactivity is the extent to which users can participate in modifying the form and content of a mediated environment in real time.	Virtual reality
Zack, 1993	Key factors as elements of interactivity: the simultaneous and continuous exchange of information; the use of multiple nonverbal cues; the potentially spontaneous, unpredictable, and emergent progression of remarks; the ability to interrupt or preempt; mutuality; patterns of turn-taking; and the use of adjacency pairs.	Organizational communication and technology
Rafaeli & Sudweeks, 1997	Interactivity is the extent to which messages in a sequence relate to each other, and especially the extent to which the last message recounts the relatedness of an earlier message.	Group communication
Ha & James, 1998	Interactivity is the extent to which the communicator and the audience respond to, or are willing to facilitate, each other's communication needs. Five characteristics of interactivity: playfulness, choice, connectedness, information collection, and reciprocal communication.	Commercial websites
Cho & Leckenby, 1999	Interactivity is the degree to which a person actively engages in message processing by interacting with messages.	Advertising
McMillan, 2000a	Thirteen features that suggest a website is interactive; including: email links, registration forms, survey/comment forms, chat rooms, search engines, and games.	Websites, advertising
Ahren, Stromer-Galley, & Neuman, 2000	Media interactivity was defined in terms of features such as audio and video. Human interaction was defined in terms of features such as bulletin boards and chat rooms.	Political campaign websites
Lombard & Snyder-Dutch, 2001	Interactivity is defined as a characteristic of a medium in which the user can influence the form and/or content of the mediated presentation or experience.	Advertising
McMillan, 2000b	Individuals rated interactivity of sites based on their perceptions of two-way communication, level of control, user activity, sense of place, and time sensitivity	General websites
Andrisani, Gaal, Gillette, & Steward, 2001	Effective interactivity for technical communication should place emphasis on limits, accuracy and consistency, trust, customizable hiding, and effective use of feedback. Interactivity as conversation.	Online help systems
Schumann, Artis, & Rivera, 2001	Interactivity is a characteristic of the consumer, and not a characteristic of the medium. The medium simply serves to facilitate the interaction.	Marketing communications on websites

Interactivity in an Age of Immersive Media

Study	Definition of Interactivity	Domain
Coyle & Thorson, 2001	A website that is described as interactive should have good mapping, quick transitions between a user's input and resulting actions, and a range of ways to manipulate the content.	Commercial websites
Brown & Jones, 2001	An interactive situation is one where the user directly requests to retrieve relevant documents. Interactivity should include proactive situations where documents are presented to the user automatically.	Information management
McMillan, 2002	Identifies four types of interactivity based on intersection of user control and direction of communication: monologue, feedback, responsive dialogue, and mutual discourse.	General websites
Liu & Shrum, 2002	Interactivity is the degree to which two or more communication parties can act on each other, on the communication media, and on the messages and the degree to which such influences are synchronized.	Advertising
Kiousis, 2002	Interactivity is both a media and psychological factor that varies across communication technologies, communication contexts, and people's perception.	General communication theory
Chou, 2003	Interactivity in instructional context should focus on learner-interface, learner-content, learner-instructor, and learner-learner interactions.	Web-based learning systems
Rafaeli & Ariel, 2007	Interactivity includes a larger variety of "players" (human and "synthetic") in an environment that might include messages for more than one specific player.	Internet research
Quiring & Schweiger, 2008	Interactivity implies differentiation between action and the exchange of meaning; there are two forms of interactivity: user-system interactivity and user-user interactivity.	Internet
McDaniel, 2009	Revisits Andrisani et al.'s five key guidelines for interactive technical communication, and adds familiar metaphor as a sixth factor for strong interactivity. Interactivity in technical communication can be designed with a mindset of procedural architecture.	Websites
Carnegie, 2009	Interactivity is created through three primary modes: multi-directionality, manipulability, and presence.	Computers and composition; rhetoric of technology
Kranz, Holleis, & Schmidt, 2010	Interactivity can be measured through the technological and conceptual phenomena of seamlessly integrating the means for interaction into everyday artifacts.	Object-based interaction; Internet of Things
Milojevic, Kleut, & Ninkovic, 2013	Interactivity can be studied at the nexus of high, medium, and low levels against textual, social, and technical types of interactivity.	Communication research
Pedersen, 2013	Interactivity as mediated social interaction.	Wearable technology
Cummings & Bailenson, 2015	Interactivity can be studied through user perception of presence in immersive environments	Virtual immersive environments

shows that achieving interactivity is context-dependent. In the field of technical communication, interactivity has been studied in the contexts of content creation (Atkinson, 2008), game design (Bogost, 2007; Michael & Chen, 2006), Web authoring (Applen, 2002), and computer-based training (Cyboran, 1995; Chou, 2003). In these studies, researchers were interested in how different platforms may offer different levels of user engagement.

Technical communicators who were interested in interactivity have also examined online help systems and Web information architecture. In their *Technical Communication* article, "Making the Most of Interactivity Online," Andrisani et al. (2001) looked at methods by which information is presented in an online help system and focused on navigability as the main principle of good interactive design. The authors recommended using adequate metaphors as a way to engage online documents users interactively. They also had identified a variety of ways technical communicators might participate in authoring effective interactive environments, such as these top five roles summarized by McDaniel (2009, p. 372):

- Setting and defining limits
- Providing accuracy and consistency of content and presentation
- Helping to gain the trust of users
- Creating information across mechanisms
- Planning effective navigation

Eight years after Andrisani et al.'s article, McDaniel (2009) published "Making the Most of Interactivity Online Version 2.0" in the same journal, further developing Andrisani and colleagues' (2001) descriptions of the online architecture of technical communication. McDaniel (2009) examined new developments in interactivity and suggested a metaphor of procedural architecture for authoring online interactive technical documents. He stated that technologically mediated interactivity can be traced back to the age of telegraphy, but what concerned most modern technical communicators are the forms of interactivity enabled by the Internet (p. 371). Though some authors argue that the history of interactive technologies dates much further back than the telegraph (see Dales, 2016), the focus of McDaniel's (2009) study was on digital interactivity, and thus it was framed in that techno-historical context.

Interactivity for Mobile Technologies

With the advancement of mobile technologies and evolution of computers into hybrid devices and ubiquitous computing, the importance and meaning of interactivity have changed according to the salient characteristics of mobile communications. Compared to desktop computers, mobile devices have additional interactive characteristics (Barnes, 2002; Kannan, Chang, & Whinston, 2001; Gao, Rau, & Salvendy, 2009): ubiquitous availability (devices are almost always "on"), personal usage (devices used in personal context), context-aware ability (customized information and services at the point of need), and ease of response (short and fast responses are facilitated). In more recent studies on mobile applications, the word *interactive* is often used to refer to different characteristics and behaviors of the software, application, or user interface (Gao, Rau, & Salvendy, 2009).

Brown and Jones (2001) defined *interactive* as the situation where the user directly issues a request to retrieve relevant documents, and *proactive* as the situation where documents are presented to the user automatically. Chen and Kotz (2000) defined active context-awareness in applications as the ability to change their content autonomously according to discovered contexts; in contrast, passive context-aware applications merely present the updated context to the user and let the user specify how the application should change. Based on Chen and Kotz's model, Barkhuus and Dey (2003) added an extra level of interactivity as personalization, which refers to customizing and tailoring. These definitions focus on the classifications of interactions and technological features that allow mobile interaction to take place.

Interactivity for New Immersive Media

How might interactivity be conceptualized for wearables and IoT products? Although most principles found in mobile communication design are applicable to wearables and IoT devices (e.g., ubiquitous availability, personalization, contextual awareness, ease of response), new conceptualizations of interactivity are needed for the immersive experience these devices promise to users. In interactive mobile communications, screen resolution, computing capacity, network speed, and media bandwidth were considered higher concerns for the quality of interaction (Hoffman & Novak, 1995). In immersive media, however, interactivity goes beyond

Interactivity in an Age of Immersive Media

mouse clicks and screen navigation. In their analysis of wearable devices and smart objects, Cirani and Picone (2015) envisioned the interactive characteristics these devices should have, including augmentation of real-life scenarios; integration of social, cyber, and physical worlds; centralization or unification of devices; and proactiveness (automated actions with minimal or no human input). For Kortuem et al. (2010), the main building blocks for IoT interactivity are in three layers of smart-object principles: activity awareness, policy awareness, and process awareness. These layers differentiate awareness by its type, through the understanding of human activities and their relationship with the physical world (activity awareness), interpreting human activities with respect to predefined organizational and social policies (policy awareness), and ordering work based on the nature of activities and associative policies (process awareness).

For Achten (2015), the ability to communicate across different platforms is most vital for successful IoT and wearables integration. Similarly, Want, Pering, and Agarwal (2016) agreed that the challenges IoT systems face in terms of interactivity are associated with heterogeneous data, lack of standardization, and interoperability. In other words, to improve interactivity, software engineers must continue to work on multi-device interaction as a key characteristic of the new computing paradigm. Google research scientists Want, Schilit, and Jenson (2015) stated that future opportunities and challenges in IoT computing revolve around ubiquitous information, machine actions and user control, and privacy and security. These issues will determine the overall interaction users have with IoT devices. From a business standpoint, Dorner and Edelman (2015) of McKinsey & Company argued that wearables and IoT products should be evaluated based on the values they add to customer experiences. They identified four core capabilities of new digital infrastructures, such as IoT systems, to enhance user experience: proactive decision making, contextual interactivity, journey-focused innovation, and real-time automation (Dorner & Edelman, 2015).

All of these features may be added to existing conceptualizations of interactivity to create relevant guidelines for interactive design in new immersive media. Drawing from the conceptualizations explored in this section, the following section presents seven dimensions of interactivity operationalized for wearables and IoT products.

Dimensions of Interactivity for Immersive Media

The new world of immersive media—of wearables and the IoT—is the rationale for revisiting the topic of interactivity following Andrisani et al. (2001) and McDaniel's (2009) work in technical communication. Prior to wearables and IoT, Szuprowicz (1995) had introduced a unified approach and identified three main dimensions of interactivity: user-to-user, user-to-document, and user-to-computer (user-to-system). The operationalization of interactivity through these three dimensions led to a framework that provides a larger umbrella needed for understanding the methods applied in research of interactivity. In her attempt to "clarify the murky conceptual water of 'interactivity,'" Stomer-Galley (2004, p. 391) simplified Szuprowicz's (1995) three dimensions into two: interactivity-as-product and interactivity-as-process. While both Szuprowicz and Stomer-Galley's dimensions provide a foundation for research and improvements in interactivity design, their applications are limited to screen-based media.

In this section, I draw from the constructs and key elements of interactivity identified in existing literature to operationalize seven dimensions of interactivity that constitute a robust design for immersive media. In each dimension, I connect conceptualizations of interactivity in traditional, screen-based communication with ideals of interactivity for mobile and immersive technologies identified in the preceding section. Each dimension offers some practical scenarios wherein technical communicators might succeed in supporting the dimension for wearable technologies or IoT products.

1. Reciprocity/ease of Response

As most authors on screen-based communication agree, an interactive platform should allow reciprocal communication, and the messages in a sequence should relate and respond to each other (Rafaeli & Sudweeks, 1997). An interactive environment should allow the user to provide feedback based on the received messages (Ha & James, 1998). Although early interactivity studies focused on responsiveness of communication exchanges (Rafaeli, 1988; Miles, 1992; Ha & James, 1998), later research concentrated on features that enable such reciprocity: chat rooms, instant messaging windows, real-time document

transfer, videoconferencing, etc. (Ahren, Stromer-Galley, & Neuman, 2000). In essence, an interactive interface is expected to facilitate responsive, real-time, reciprocal communication. When applied to immersive technologies, reciprocal communication is characterized by ease of response between users and devices. Based on Smart, Heersmink, and Clowes's (2017) study, the IoT environment has the capacity to cultivate a "cognitive ecology" through which users actively participate in constructing its configuration. This participatory model has been theorized previously by Jenkins (2002, 2006) in the context of online social engagement.

In the case of wearable technology, technical communicators can work with interface designers to consider the kind of features that would allow users to communicate quickly and easily with their correspondents. For instance, how might fitness trackers like Fitbit and Samsung Gear Fit allow wearers to share their running records and receive cheers from their friends? For IoT products, how might smart home AIs let users post comments to websites with minimal effort? Would the Apple HomePod or Amazon Echo allow users to share their opinions on the curry chicken recipe that they just received from the Food Network website via Siri or Alexa? In terms of content strategy, technical communicators will need to consider how to set up digital content that can be easily read or accessed on a wearable or IoT device and how the format encourages or discourages users from responding to the content.

2. Synchronicity/context Awareness

The conventional construct of synchronicity refers to the speed at which the message can be delivered and at which people can process messages (Gao, Rau, & Salvendy, 2009). Newer applications are enabling faster responses and interactions. The faster the response is, the less inhibited the user is, and the more interactive the user perceives the system or product or process to be (Gao, Rau, & Salvendy, 2009). Synchronicity on a website can also be translated into both the actual waiting time during browsing and the user's subjective perception of the waiting (Dellaert and Kahn, 1999; Hornik, 1984). An interactive design should strive to reduce waiting time and provide an opportunity for instant response. In immersive media, synchronicity is represented by just-in-time information presented to the user (Want, Schilit, & Jenson, 2015; Dorner &

Edelman, 2015). A "smart" interaction is one that is context-aware, whereby the device proactively offers its user the right information at the right time (Chen & Kotz, 2000).

Most current wearables and IoT products excel in this dimension of interactivity. At a time of high-speed Internet and broad data coverage, users expect information at their disposal whenever and wherever they need it. For example, users expect weather and traffic information immediately upon request. Synchronicity in wearables and IoT also means automatic refreshes to keep information up-to-date and useful for users. Another example can be found in Google Now, whereby the Google AI, in sync with Google Calendar, reminds its users to leave for their next activity or meeting place 30 minutes before the event begins. Technical communicators might work with designers and developers to consider enhancing synchronicity by using the GPS functionality in the user's mobile device (phone or wrist-worn computer) to detect the distance between the user and his or her next event location, and, considering traffic condition, alert the user and give that person ample time to leave for the event—which may well be more than 30 minutes in advance (see Figure 3).
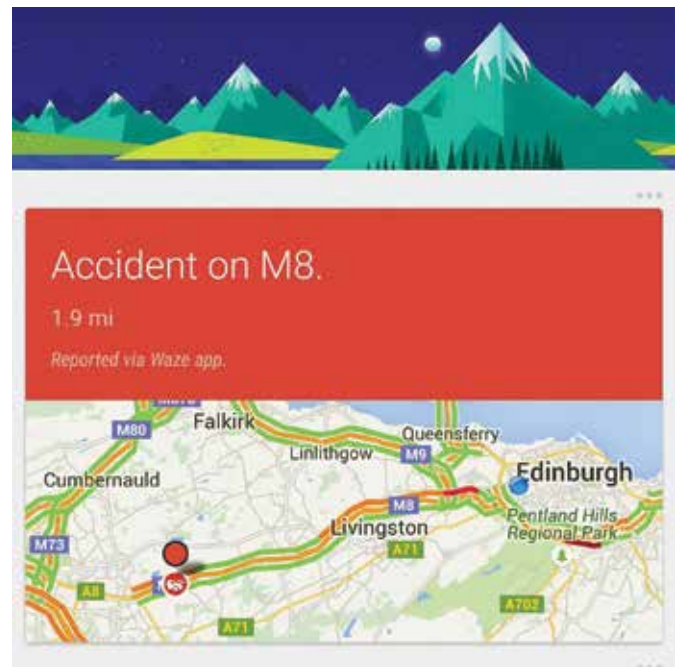

Figure 3. Google Now notifies a user about road conditions before the user begins the trip. Photo credit: Matteo Doni (public domain image retrieved from Flickr).

Interactivity in an Age of Immersive Media

A context-aware smart device should also process queries by recognizing the user (who is requesting the information), the purpose (why the particular information is requested), and other contextual factors like culture and political conditions. This will help IoT products avoid mistakes like the one committed by Amazon's Alexa that had caught both the user and his parent off guard. Amazon's competitor, Google Home, has designed a solution to this problem by creating AI algorithms that recognize the voice of individual users, acknowledging that its device is to be shared among multiple users in a household. (See a heartwarming promo video of this feature here: https://www.youtube.com/watch?v=RZNqSy-zFXo.) It's the first step to achieving effective interactions between users and IoT media. Technical communicators, who are experts in understanding the rhetorical situation of communication (user, audience, purpose, content, and medium), should lead the way in this journey.

3. Connectedness/ubiquity/pervasiveness

The idea of connectedness is broadened in the context of networked communication. Based on the construct proposed by Ha and James (1998b), connectedness refers to the feeling of being linked to more resources related to the individuals and the tasks they are engaged with. Features that may enable connections between individuals and their resources include social networking websites, shared network work folders, open-access project management systems, and cloud-based productivity software and applications. In mobile and immersive contexts, connectedness can be represented by ubiquitous or pervasive computing (Want, Pering, & Agarwal, 2016). Being fully connected means that users can access multiple platforms with a continuous experience. This mobile iteration of connectedness can be applied to cloud computing in screen-based communication to realize the ideal of interconnectedness (Want, Schilit, & Jenson, 2015; Cirani & Picone, 2015).

For instance, wearables users may want their social media accounts and wearable devices linked so they can share updates from their devices to their online communities easily. Pushing it a little further, wearables developers may consider creating a more seamless transition experience between a user's personal devices such that the user might have continuous digital interactions across devices. For instance, a recent wearable startup, Token (https://tokenize.com), works with the Windows 10 platform to let users access their credit card, house keys, car key, desktop login, and work badge through a finger ring band. Such connectedness is unprecedented and is made possible by smart IoT infrastructure. Working with engineers and programmers, technical communicators can leverage this opportunity by creating a digital information experience similar to that of Token's initiative.

4. User Control/personalization

A user's perception of his or her control in the interactive experience has been studied by those interested in the intersection between the psychological and technical design of interaction (McMillan, 2000b). There are two constructs within user control identified by Steuer (1992): ranging and mapping. The former refers to the number of options the environment provides the user to modify the task flow and the environment (such as customization and personalization of user interface); the latter refers to the extent to which the controls and manipulations in a mediated environment are similar to controls and manipulations in the real world (Gao, Rau, & Salvendy, 2009). User control is also associated with minimizing effort in the achievement of a task and ease of adding information (Heeter, 1989). Although not limited to mobile contexts, user control is often made synonymous to the ability to personalize devices. It gives users a sense of autonomy and agency to be able to make their devices truly their own. Using Jensen's (1998) user information and distribution patterns, Diderichsen (2006) showed that interactivity in augmented media can be characterized by 1) the ability of users to control input, 2) the consequences of user input on the expressions of message, and 3) the consequences of expression of message on information content. For Sarma and Girão (2009), immersive media such as the IoT must address what kind of control users have over self-generated content as a way to manage their digital identities.

In immersive media, it is especially important that users be able to customize their networked technologies to their liking. Users do not want to think they do not have control over their wearable devices and IoT systems. Among the greatest fears in using wearable and IoT technologies are user privacy and security (Want, Schilit, & Jenson, 2015; Roman, Zhou, & Lopez,

2013). Users need to know that they retain control over their devices and that they can personalize them to a desirable level (Barkhuus & Dey, 2003). This dimension of interactivity serves not only to heighten pleasure with a device but also to build trust within the user (Gurak, 1997). Trust is directly proportional to the degree to which users want to interact with their devices.

A textbook example in this dimension of interactivity in wearables can be found in the case of Google Glass. Most of the comments Google received about their head-mounted computer device when it first came to the market were related to the realization that users—as well as non-users—were not sure when the device was recording or capturing images. The lack of user control in that case soon led to the demise of the device. Wearables and IoT developers must pay attention to how they present control to their users. Technical communicators can play a vital role in presenting that information. For head-worn cameras, for example, technical communicators might work with interface designers to ensure there's a distinctive on/off switch where users get to control when to turn the camera on and off. This switch must be visible and easily accessible.

5. Navigability/accessibility

Navigability on traditional screen media is defined as the efficiency, effectiveness, and satisfaction with which users navigate the system in order to fulfill their goals under specific conditions (Casto et al., 2007). It has a definite impact on the overall success of Web applications. Not only does the navigability of an interface facilitate the processing of information but different levels of navigability also carry detrimental effects on the perceived credibility of the Web (Boushra, 2008). The construct of navigability is also directly related to a user's self-efficacy in completing tasks, which accounts for the user's attitude toward the interface (as illustrated in McMillan & Hwang, 2002). An interactive website employs intuitive text hyperlink structures and elements of navigation that increase overall effectiveness in using the site (e.g. site map, search bar, header and side menus, permanent links across pages, etc.). Specific to immersive media context, navigability is translated to accessibility since products like a smartwatch and home AI have very limited screen navigation. Wearables and IoT technologies alike must pay attention to the tension around accessibility—the

benefits and disadvantages these products present to users from all walks of life (Miorandi et al., 2012; Mashal et al., 2015).

In voice-activated or natural language processing interfaces of most wearables and IoT devices, navigability can be achieved by audio/verbal and visual feedback (e.g., beeping sounds, blinking lights) to indicate successful or unsuccessful navigation. It is important to keep in mind that most immersive media devices also rely on touch/haptic and gestural input to activate or navigate certain functions (see examples in Figure 4).

Figure 4. A user showing different interfaces of fitness trackers. Photo credit: Mike Lee (public domain image retrieved from Flickr).

As advocates for users, technical communicators must pay attention to the accessibility of these interfaces for those who may not have the ability to use these input methods. To create truly interactive interfaces, technical communicators and designers need to work together to make devices with multiple forms of input and feedback options such that users can choose what works best for them. As of this writing, it seems that most wearable devices in the market are lacking in this dimension. A quick survey of fitness trackers and smartwatches would yield similar results—these devices mostly allow only one or two means of navigation

Interactivity in an Age of Immersive Media

limited to touch and voice (Wentzel, Velleman, & van der Geest, 2016). More input/output modalities are necessary to ensure more accessible design of wearables as well as IoT products.

6. Entertainment/sensibility

In some studies, playfulness was used as a salient predictor for website popularity and served as a characteristic of interactivity (Chen & Yen, 2004; Ha & James, 1998). The entertainment construct of interactivity emphasizes intrapersonal communication— communication within oneself— since "playful devices" or interfaces can provide the user an enjoyable inner talk with oneself (Ha & James, 1998). The importance of the entertainment dimension can be seen in how entertaining content and interface encourages participation and helps attract users to the platform (Scharl, Dickinger, & Murphy, 2005). On screen, interactive entertaining features include GIF memes, mini games, and click-activated animations. However, the kind of fun and entertainment made possible in a screen-based environment may not be available to immersive media that lack a sizable display. For that, entertainment may be characterized as sensibility of the device—that is, how the device can communicate or react to users with human-like style and personality (McCarthy et al., 2006).

In IoT systems, playfulness can be achieved by verbal feedback, light-hearted humor, and other pseudo-human sensibilities (Coulton, 2015). On a philosophical level, technical communicators may consider the ontology of objects—i.e., the being of object or what makes an object an object. Then, consider how might we make "things" more human-like, since researchers like Sloman (2009) and Bailenson & Yee (2005) have found that users put more trust in intelligent agents that present human-like traits or mimic human characteristics, whether or not the object looks like a human at all.

Many current home AIs are designed to intersperse daily activities and user interactions with jokes or blithe reactions. For example, some Siri users have shared that when asked if Siri has a boy/girlfriend, the programmed AI would respond with light sarcasm. The same goes for questions like, "Can you beatbox?" "What's 0 divided by 0?" and "Who made you?" when they are asked to Apple's Siri (Figure 5), Amazon's Alexa, Microsoft's Cortana, and (OK) Google.
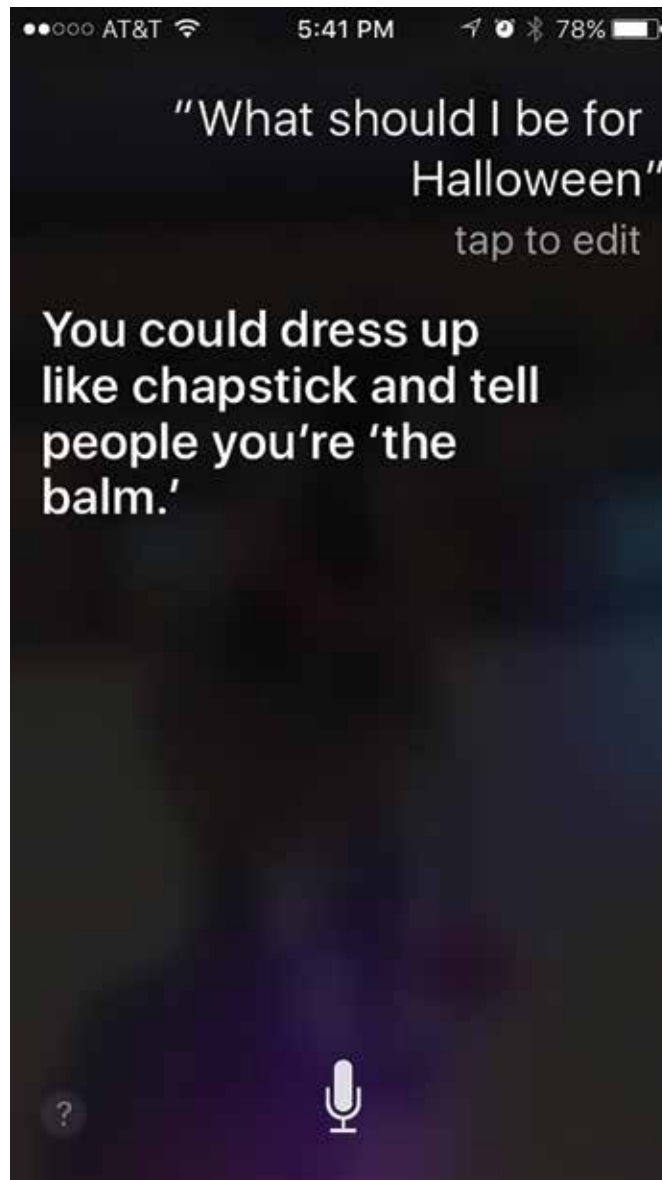
Figure 5. A user asked Siri "What should I be for Halloween" and Siri replied with, "You could dress up like chapstick and tell people you're 'the balm.'" Photo credit: H. Michael Karsh-is (photo domain image retrieved from Flickr).

Although not all users would like their devices to joke with them, it certainly adds an interactive element to these technologies by including something we consider to be fundamentally human—humor. While it may seem trivial, it would make for a legitimate study for technical communicators to survey user experience with devices that are more sensible and entertaining compared to those that are less so.

Jason Chew Kit Tham

7. Sensory Stimulations/multimodality

Heeter (1989) demonstrated that the more logically (and realistically) mediated communication resembles analog, physical, or face-to-face communication, the more interactive the communication is. Screen-based communication tends to mimic real-life interactions but is often limited by the available modality of the technology. Typical sensory stimulations afforded by screen-based media are audio and visual. New tools and design applications allow for digital media today to be more tactile than their predecessors. Motion, visual appearance, sound, and sense of space and time are the building blocks of interactive design (Saffer, 2006). Industrial designer Jinsop Lee (2013), in his TED Talk, revealed a Five Senses Theory that prompts designers to think about ways to engage users by involving their five senses. This construct of sensory stimulation is rather new and refers to the degree to which an interface involves human senses. For IoT and wearable products, sensory stimulations can be achieved through applications of multimodality (Kranz, Holleis, & Schmidt, 2010; Lauth et al., 2012).

As discussed previously in the navigability/ accessibility dimension, interactivity can be improved by multiple modality of input and output in immersive media products. While this may seem easy to achieve in wearable technology, it can be a major challenge for IoT systems. Often thought of as objects distant from the user (such as light bulbs, speakers, thermostats, and door locks), IoT devices require technical communicators' help in achieving greater interactivity

through multiple sensory stimulation. Technical communicators can be field researchers who work directly with users to understand the affordances and limitations of various modalities. Given their expertise in analyzing user needs, technical communicators can collect and report these findings to their product teams.

In today's IoT products, the possibilities have yet to be fully actualized for stimulation beyond the visual and aural. Lauth et al. (2012) argued that, in principle, immersive media should challenge "the classical notion of human-computer interaction in that sensors can make the body as a whole an interface in technically enhanced everyday actions at any point in time at any location" (p. 24). With this development comes the enthusiasm that technical communication may cover a fuller branch of semiosis—that is, of human sign formation based on any modality in any embodied conditions.

Summary

To provide an overview of the seven dimensions, Figure 6 shows the dimensions' connections to traditional interactivity as well as those of mobile technologies. All seven dimensions devised here are central to the richness of interactivity. However, they are not mere checklist items for wearables and IoT product designers, nor are they equally important in different contexts. Immersive media developers must consider the goals of their products and the users they are serving when deciding on the dimensions to emphasize. Ideally, all seven dimensions should be present to yield effective and engaging interactivity for the users.
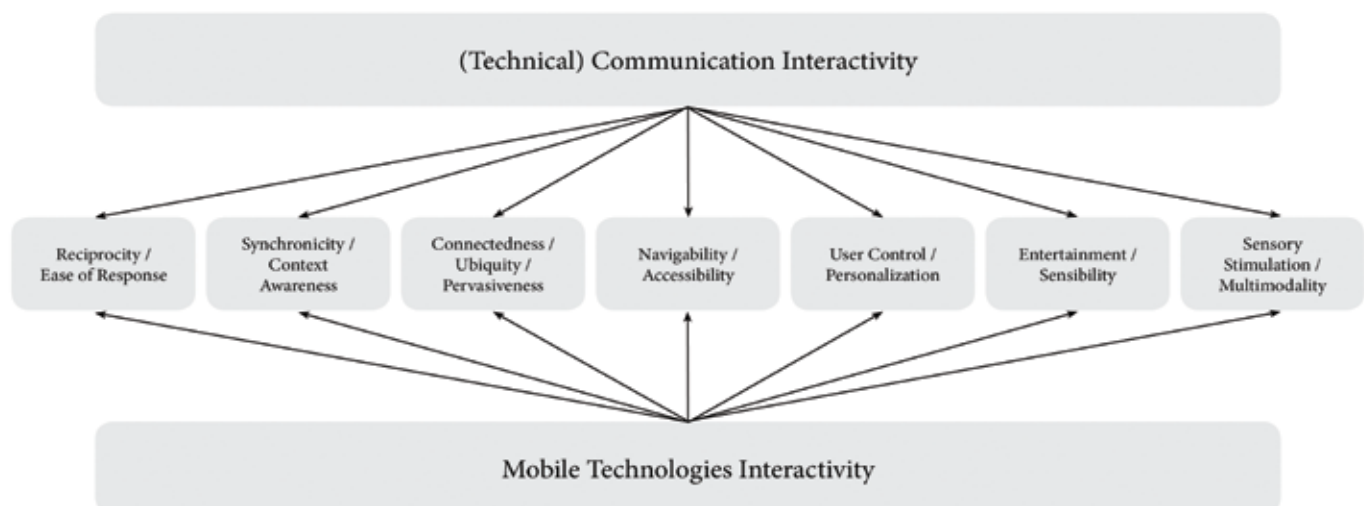

Figure 6. Interactivity operationalized for immersive technical communication. Graphic created by author.

Interactivity in an Age of Immersive Media

As found in much of the literature reviewed, interactivity concepts often overlap and are interrelated (McMillan & Hwang, 2002). The same goes for these seven dimensions. For instance, reciprocity/ease of response, synchronicity/context awareness, and user control/personalization overlap to lead to perceived active participation in communication. The intersection of navigability/accessibility and connectedness/ubiquity/pervasiveness can be viewed in the framework of usability of an interactive design. Entertainment/sensibility and sensory stimulation/multimodality can be paired when surveying user experience in mediated communication. The medley of these operationalizations constitutes a chorus of mixed methodologies and approaches to better, more interactive user experience in immersive media such as wearables and IoT products.

Toward Immersive Technical Communication

What is the actual role of technical communicators in all this? How might we influence the design of immersive media such as wearables and IoT products to leverage an effective interactivity? The response to these questions might be manifold. First and foremost, a majority of technical communicators in the field of information technology today work with product design and development teams that determine the final outcome of emerging technologies, including new wearables and IoT products. So knowing how interactivity is conceptualized for these immersive media, along with the operationalized dimensions of interactivity, would allow technical communicators to participate more productively in the design and development process. It is challenging to pinpoint specific technical communication genres to which we should pay more attention in immersive media since, as always, technology affects all aspects of our work. Of course, technical communicators can be experts in the existing genres that will continue to be used in immersive media environments, such as user assistance, content management, and technical documentation. All these processes, however, must be upgraded to be an integrated part of immersive media products to complement the available interactivity (Hoffman, 2015).

Second, technical communicators are called to be symbolic-analysts (Johnson-Eilola, 1996) who specialize in seeing the available means of influence in any given communicative environment, including wearables and IoT technologies. As IoT applications continue to enjoy the large diffusion and pervasive deployment of smart objects, technical communicators can help developers and users to see these devices as communication interfaces that will affect their interactions with the physical, social, and cyber worlds. Questions may arise for technical communicators to help users understand how humans and machines are bridged across these worlds (from Cirani & Picone, 2015):

1. Which objects are around me?
2. Do I own the right privileges to control or interact with these objects directly?
3. What is a given object? What can it do, and what can I do with it?
4. How can I interact with it?

To avoid mistakes like the Alexa misfortune mentioned earlier in this article, technical communicators play an important role in helping programmers develop immersive communication that look beyond the technical principles to design rhetorically sound interfaces that provide maximum interactivity, usability, and the best user experience. Although this may sound idealistic, the shift to ubiquitous computing—a driving force for the proliferation of wearables and IoT systems—is already happening, and we must work toward achieving a full interactive yet effective immersive user experience, which will be a milestone for widespread IoT adoption in time to come.

Third, technical communicators also serve as user advocates who keep watch on ethical issues in immersive media design (Sun & Getto, 2017; Tofteland-Trampe, 2017). Emerging technologies show us that the laws for regulating their production and usage are often behind the times; technical communicators must be a knowledgeable counsel to their respective teams, making sure legal and ethical choices are made. Through user research and surveys, technical communicators should also listen closely to users about their experience with new immersive technologies. They should err on the side of advocacy for users rather than supporting corporate interests.

In most cases, users lack the voice to influence corporate actions, such as the case of Oral Roberts University's Fitbit program—where incoming freshmen were encouraged to wear a Fitbit to record their

college-required daily aerobic activity (instead of keeping the traditional manual log), with the data automatically entered in ORU's Learning Management System ("Oral Roberts University integrates," 2016). In a case of university versus the student, an instance like this could raise ethical questions without clear-cut answers (e.g., Are "connected" students put in a privileged position? Perceived as more committed to ORU objectives? Considered more forthcoming and transparent about their aerobic activity?). Technical communicators, however, can influence the outcome of the deployment if they work with developers to provide better user control in their interaction with the Fitbit device such that users get more autonomy in their usage (e.g., a daily alert that fitness data is about to be submitted with the option to allow/disallow the submission).

Conclusion

In an age of immersive media and connected technologies, technical communicators need to pay attention to the profound new interactivity and user experience these technologies bring to life. Given the evolution of mobile and wearable computing, more reliable measures of interactivity are necessary. Especially in the age of wearable technology and IoT, practitioners and scholars alike should continue to expand their toolkits by broadening their understanding of interactivity to enhance user experience. As current research on interactivity remains inadequate, continued in-depth conceptualization of the constructs in interactivity would help uncover more accurate relationship between interactivity and its dependent variables (Liu, 2003).

Technical communicators play a key role in helping researchers locate and conduct evaluations of interactivity in immersive media environments. Future studies may consider investigating the effects of interactivity on user experience from multiple perspectives, including immersion and presence (Cummings & Bailenson, 2015), cultural differences (Tham, 2016), perceptional component of interactivity, or how users perceive interactivity in ways that are more specific than just positive or negative (Quiring, 2009; Rafaeli & Ariel, 2007; Milojevic, Kleut, & Ninkovic, 2013), rhetoric of immersive and embodied interfaces (Carnegie, 2009), and the distribution of interfaces creating a cognitive ecology (Smart, Heersmink, & Clowes, 2017) of immersive media experience, to name a few directions.

By way of synthesis, this article shows that existing literature provides insights into the dimensions of interactivity that can be useful in understanding the multiple facets of human-computer interaction. Although not every communicative domain supports the same assertion, the core conceptual ideas about interactivity remain true.

Bottom Line/guidelines

The overarching goal of this article is to revisit conceptualizations of interactivity for technical communication in immersive design. It has highlighted several major definitions of interactivity along with key conceptualizations of interactivity. These concepts were operationalized into seven dimensions of interactivity for immersive media. Considering the complexity of interactivity, here is a summarized set of guidelines as takeaways for practitioners. For technical communicators and communication designers—particularly those who are inventing new interfaces for emerging technologies, such as wearables and immersive technology systems—the conceptualizations and operationalizations presented in this essay could be applied to their work in the following ways:

- **Enhancing connections:** Design interfaces that enable seamless connection between the user and the system, data, and actions. Ensure versatility and compatibility across digital platforms and applications.
- **Offering optimal control and customization:** Allow appropriate user manipulation of media architecture to elevate user experience. Let users choose from multiple input and feedback methods.
- **Providing contextual and proactive assistance:** Include smart algorithms that "learn" the behaviors of the user and supply relevant information at the right timing. This will increase the user's sense of interactions with the device or system, and cultivate delight in the user when using the device or system.
- **Engaging users through device/system sensibility and sensory stimulations:** Develop tactile interfaces that provoke and arouse emotions in users to increase the realness of communication between users and systems.

These guidelines were generated based on the seven dimensions of interactivity with an eye toward

Interactivity in an Age of Immersive Media

their implications for interfaces of immersive media and connected devices like the IoT. As mediated communication continues to advance, richer studies on user experience and user interface design would further aid scholars and designers' ability in understanding the long-term implications of interactivity.

Acknowledgement

References

Achten, H. (2015). Closing the loop for interactive architecture. In *Proceedings of the 33rd eCAADe Conference, 2,* 623–632. Retrieved from http://papers.cumincad.org/data/works/att/ecaade2015_138.content.pdf

Andrisani, D., Gaal, A.V., Gillette, D., & Steward, S. (2001). Making the most of interactivity online. *Technical Communication, 48,* 309–323.

Ahren R., Stromer-Galley, J., & Neuman, W. (2000). Interactivity and structured issue comparisons on the political web: An experimental study of the 2000 New Hampshire presidential primary. *Paper presented at International Communication Association,* June 1–5, Acapulco, MX.

Applen, J. (2002). Technical communication, knowledge management, and XML. *Technical Communication, 49,* 301–313.

Ariel, Y., & Avidar, R. (2015). Information, interactivity, and social media. *Atlantic Journal of Communication, 23*(1), 19–30.

Atkinson, J. (2008). Towards a model of interactivity in alternate media: A multilevel analysis of audiences and producers in a new social network movement. *Mass Communication and Society, 11*(3), 227–247.

Bailenson, J. & Yee, N. (2005). Digital chameleons: Automatic assimilation of nonverbal gestures in immersive virtual environments. *Psychological Science, 16,* 814–819.

Barkhuus, L., & Dey, A. (2003). Is context-aware computing taking control away from the user? Three levels of interactivity examined. *UbiComp 2003: Ubiquitous Computing, 2864,* 149–156.

Barnes, S. (2002). Wireless digital advertising nature and implications. *International Journal of Advertising, 21,* 399–420.

Bogost, I. (2007). *Persuasive games: The expressive power of videogames.* Cambridge, MA: MIT Press.

Boushra, M. (2008). The influence of web site feature-based interactivity on users' attitudes and online behaviors. *PhD dissertation, The Pennsylvania State University.* State College, PA.

Brown, P., & Jones, G. (2001). Context-aware retrieval: Exploring a new environment for information retrieval and information filtering. *Personal Ubiquitous Computer, 5*(4), 253–263.

Carnegie, T.A.M. (2009). Interface as exordium: The rhetoric of interactivity. *Computers and Composition, 26,* 164–173.

Casto, C.C., Melia, S., Genero, M., Poels, G., & Calero, C. (2007). Towards improving the navigability of web applications: A model-driven approach. *European Journal of Information Systems, 16,* 420–447. http://www.palgrave-journals.com/ejis/journal/v16/n4/full/3000690a.html

Chou, C. (2003). Interactivity and interactive functions in web-based learning systems: A technical framework for designers. *British Journal of Educational Technology, 34*(3), 265–279.

Chen, G., & Kotz, D. (2000). A survey of context-aware mobile computing research (Technical Report TR2000-381). Hanover: Department of Computer Science, Dartmouth College.

Chen, K., & Yen, D. (2004). Improving the quality of online presence through interactivity. *Information and Management, 42*(1), 217–226.

Cho, C., & Leckenby, J. (1999). Interactivity as measure of advertising effectiveness. *Proceedings of the American Academy of Advertising.* M. S. Roberts (Ed.) Gainesville, FL: University of Florida, 162–179.

Chou, C. (2003). Interactivity and interactive functions in web-based learning systems: A technical framework for designers. *British Journal of Educational Technology, 34*(3), 265–279.

Cirani, S., & Picone, M. (2015). Wearable computing for the Internet of things. *IT Professional, 17*(5), 35–41.

Coulton, P. (2015). Playful and gameful design for the Internet of Things. In Anton Nijholt (Ed.), *More playful user interfaces* (pp. 151-173). Singapore: Springer.

Coyle, J., & Thorson, E. (2001). The effects of progressive levels of interactivity and vividness in web marketing sites. *Journal of Advertising, 30*(3), 65–77.

Cummings, J. J., & Bailenson, J. N. (2015). How immersive is enough? A meta-analysis of the effect of immersive technology on user presence. *Media Psychology, 19*(2), 272–309.

Cyboran, V. (1995). Designing feedback for computer-based training. *Performance and Instruction, 34*, 18-23.

Dales, A. (2016). Internet of Things and the digital twin—Impact on technical communication. Center for Information-Development Management. Retrieved from https://www.infomanagementcenter.com/publications/e-newsletter/cidm-enews-05-16/internet-of-things-and-the-digital-twin-impact-on-technical-communication/

Dellaert, B., & Kahn, B. (1999). How tolerable is delay?: Consumers' evaluations of Internet web sites after waiting. *Journal of Interactive Marketing, 13*(1), 41-54.

Diderichsen, P. (2006). Augmented communication: The communicative potential of the Internet. *Lund University Cognitive Studies, 132*. Retrieved from https://pdfs.semanticscholar.org/afb6/b1b377e0b291362a05cf1d274c59426b2a9e.pdf

Dörner, K., & Edelman, D. (2015). What 'digital' really means. *McKinsey & Company Article.* Retrieved from https://digitalstrategy.nl/files/What_digital_really_means-McKinsey-July-2015.pdf

Floris, A. & Atzori, L. (2015). Quality of experience in the multimedia Internet of Things: Definitions and practical use-cases. *Proceedings of IEEE International Conference on Communication Workshop,* 1747–1752. Retrieved from http://ieeexplore.ieee.org/abstract/document/7247433/

Gao, Q., Rau, P., & Salvendy, G. (2009). Perception of interactivity: Affects of four key variables in mobile advertising. *International Journal of Human-Computer Interaction, 25*(6), 479–505.

Greengard, S. (2015). *The Internet of things*. Cambridge, MA: MIT Press.

Gurak, L. J. (1997). *Persuasion and privacy in cyberspace: The online protests over Lotus MarketPlace and the Clipper Chip*. New Haven: Yale University Press.

Ha, L. & James, L. (1998). Interactivity reexamined: A baseline analysis of early business web sites. *Journal of Broadcasting & Electronic Media, 42*(4), 457–474.

Heeter, C. (1989). Implications of new interactive technologies for conceptualizing communication. *Media use in the information age: Emerging patterns of adoption and computer use,* J. L. Salvaggio & J. Bryant (Eds.) Hillsdale, NJ: Lawrence Erlbaum Associates, 217–235.

Hoffman, A. (2015). Smart factories require smart documentation. *TC World*. Retrieved from http://www.tcworld.info/e-magazine/content-strategies/article/smart-factories-require-smart-documentation/

Hoffman, D., & Novak, T. (1995). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing, 60*(3), 50–68.

Hornik, J. (1984). Subjective vs. objective time measures: A note on the perception of time in consumer behavior. *Journal of Consumer Research, 11*(1), 615–618.

Jenkins, H. (2002). Interactive audiences? The "collective intelligence" of media fans. In Dan Harries *The new media book.* Berkeley, CA: University of California Press. Retrieved from https://labweb.education.wisc.edu/curric606/readings/Jenkins2002.pdf

Jenkins, H. (2006). *Convergence culture: When old and new media collide*. New York, NY: New York University Press.

Jensen, J.F. (1998). Interaktivitet & interaktive medier. In J.F. Jensen (Ed.), *Multimedier, hypermedier, interaktive medier,* Volume 3 of *FISKserien* (pp. 199–238). Aalborg, Denmark: Aalbord Universitetsforlag.

Johnson-Eilola, J. (1996). Relocating the value of work: Technical communication in a post-industrial age. *Technical Communication Quarterly*, 5, 245–270.

Kannan, P.K., Chang, A.M., & Whinston, A.B. (2001). Wireless commerce: Marketing issues and possibilities. *Paper presented at the 34th Hawaii International Conference on System Science,* Hawaii.

Kenney, K., Gorelik, A., & Mwangi, S. (2000). Interactive features of online newspapers. *First Monday, 5*(1). Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/720/629

Kiousis, S. (2002). Interactivity: A concept explication. *New Media & Society*, 4, 355–383.

Kortuem, G., Kawsar, F., Sundramoorthy, V., & Fitton, D. (2010). Smart objects as building blocks for the

Internet of things. *IEEE Internet Computing, 14*(1), 44–51.

Kranz, M., Holleis, P., & Schmidt, A. (2010). Embedded interaction: Interacting with the Internet of things. *IEEE Internet Computing, 14*(2), 46–53.

Lauth, C., Berendt, B., Pfleging, B., & Schmidt, A. (2012). Ubiquitous computing. In A. Mehler & L. Romary (Eds), *Handbook of technical communication* (pp. 735–770). Germany: De Gruyter Mouton.

Lee, J. (2013). Design for all 5 senses. *TED Talk, Long Beach California.* http://www.ted.com/talks/jinsop_lee_design_for_all_5_senses.html

Liu, P. (2003). Developing a scale to measure the interactivity of web sites. *Journal of Advertising Research, 43,* 207–216.

Liu, P., & Shrum, L. (2002). What is interactivity and is it always such a good thing?: Implications of definition, person, and situation for the influence of interactivity on advertising effectiveness. *Journal of Advertising, 31,* 53–64.

Lombard, M., & Snyder-Dutch, J. (2001). Interactive advertising and presence: A framework. *Journal of Advertising, 1*(2), 56–65.

Mashal, I., Alsaryrah, O., Chung, T. Y., Yang, C. Z., Kuo, W. H., & Agrawal, D. P. (2015). Choices for interaction with things on Internet and underlying issues. *Ad Hoc Networks, 28,* 68–90.

McCarthy, J., Wright, P., Wallace, J., & Dearden, A. (2006). The experience of enchantment in human–computer interaction. *Personal and Ubiquitous Computing, 10*(6), 369–378.

McDaniel, R. (2009). Making the most of interactivity online version 2.0: Technical Communication as procedural architecture. *Technical Communication, 56,* 370–386.

McMillan, S. (2000a). Interactivity is in the eye of the beholder: Function, perception, involvement, and attitude toward the web site. *Proceeding of the American Academy of Advertising.* M. A. Shaver (Ed.) East Lansing, MI: Michigan State University, 71–78.

McMillan, S. (2000b). What is interactivity and what does it do? *Paper presented at Association of Education in Journalism and Mass Communication Conference,* August, Phoenix, AZ.

McMillan, S. (2002). A four-part model of cyber-interactivity: Some cyber-places are more interactive than others. *New Media and Society, 4,* 271–291.

McMillan, S., & Hwang, J. (2002). Measures of perceived interactivity: An exploration of communication, user control, and time in shaping perceptions of interactivity. *Journal of Advertising, 31*(3), 41–54.

Michael, D. & Chen, S. (2006). *Serious games: Games that educate, train, and inform.* Boston, MA: Thomson Course Technology.

Miles, I. (1992). When mediation is the message: How suppliers envisage new markets. In M. Lea (Ed.), *Contexts of Computer-Mediated Communication* (pp. 145–167). New York, NY: Harvester-Wheatsheaf.

Milojevic, A., Kleut, J., & Ninkovic, D. (2013). Methodological approaches to study of interactivity in communication journals. *Comunicar, 41*(21), 95–102.

Miorandi, D., Sicari, S., De Pellegrini, F., & Chlamtac, I. (2012). Internet of things: Vision, applications and research challenges. *Ad Hoc Networks, 10,* 1497–1516.

Oral Roberts University integrates wearable technology with physical fitness curriculum for incoming students. (2016). ORU News. Retrieved from http://www.oru.edu/news/oru_news/20160104_fitbit_tracking.php

Pedersen, I. (2013). *Ready to wear: A rhetoric of wearable computers and reality-shifting media.* Anderson, SC: Parlor Press.

Quiring, O. (2009). What do users associate with 'interactivity'? A qualitative study on user schemata. *New Media & Society, 11,* 899–920.

Quiring, O., & Schweiger, W. (2008). Interactivity: A review of the concept and a framework for analysis. *Communications, 33*(2), 147–167.

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wiemann and S. Pingree (Eds.), *Advancing Communication Science: Merging Mass and Interpersonal Process* (pp. 110–134). Newbury Park, CA: Sage.

Rafaeli, S., & Ariel, Y. (2007). Assessing interactivity in computer-mediated research. In A.N. Joinson, K.Y.A. McKenna, T. Postmes, & U.D Reips (Eds.), *The Oxford Handbook of Internet Psychology* (pp. 71-88). Oxford, UK: Oxford University Press.

Rafaeli, S., & Sudweeks, F. (1997). Network interactivity. *Journal of Computer-Mediated Communication, 2*(4). Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.1997.tb00201.x/full

Roman, R., Zhou, J., & Lopez, J. (2013). On the features and challenges of security and privacy in distributed Internet of things. *Computer Networks, 57*, 2266–2279.

Saffer D. (2006). The elements of interactive design. *UX Matters.* Retrieved from http://www.uxmatters.com/mt/archives/2006/05/the-elements-of-interaction-design.php

Sarma, A. C., & Girão, J. (2009). Identities in the future Internet of things. *Wireless Personal Communications, 49*, 353–363.

Scharl, A., Dickinger, A., & Murphy, J. (2005). Diffusion and success factors of mobile marketing. *Electronic Commerce Research and Applications, 4,* 159–173.

Schumann, D., Artis, A., & Rivera, R. (2001). The future of interactive advertising viewed through an IMC lens. *Journal of Interactive Advertising, 1*(2). 43–55.

Sloman, A. (2009). Some requirements for human-like robots: Why the recent over-emphasis on embodiment has held up progress. In *Creating brain-like intelligence* (pp. 248–277). Germany: Springer Berlin Heidelberg.

Smart, P., Heersmink, R., & Clowes, R. W. (2017). The cognitive ecology of the Internet. In *Cognition beyond the brain* (pp. 251–282). Switzerland: Springer International Publishing.

Steuer, J. (1992) Defining virtual reality: Dimensions determining telepresence. *Journal of Communication, 42*(4), 73–93.

Stromer-Galley, J. (2004). Interactivity-as-product and interactivity-as-process. *The Information Society, 20*, 391–394.

Sun, H. & Getto, G. (2017). Localizing user experience: Strategies, practices, and techniques for culturally sensitive design. *Technical Communication, 64*, 89–94.

Sydell, L. (2017). In Google's vision of the future, computing is immersive. National Public Radio. Retrieved from http://www.scpr.org/news/2017/05/20/72036/in-google-s-vision-of-the-future-computing-is-imme/

Szuprowicz, B. (1995). *Multimedia networking,* New York, NY: McGraw-Hill.

Tham, J. (2016). Globally fit: Attending to international users and advancing a sociotechnological design agenda for wearable technologies. *Proceedings of the 34th ACM International Conference the Design of Communication.* Retrieved from http://dl.acm.org/citation.cfm?id=2987599

Tofteland-Trampe, R. (2017). Crossing the divide: Implications for technical communication user advocates. *Technical Communication, 64*, 141–153.

Want, R., Pering, T., & Agarwal, Y. (2016). Multidevice interaction. *Computer, 12*, 16–20.

Want, R., Schilit, B. N., & Jenson, S. (2015). Enabling the Internet of things. *Computer, 48*(1), 28–35.

Wentzel, J., Velleman, E. & van der Geest, T. (2016). Wearables for all: Development of guidelines to stimulate accessible wearable technology. *Proceedings of the 13th Web for All Conference.* Retrieved from http://dx.doi.org/10.1145/2899475.2899496

Wu, G. (1999) Perceived interactivity and attitude toward website. In M.S. Roberts (Ed.), *Proceedings of the American Academy of Advertising* (pp. 254–262). Gainesville, FL: University of Florida.

Zack, M. (1993). Interactivity and communication mode choice in ongoing management groups. *Information Systems Research, 4*, 207–239.

About the Author

Jason Chew Kit Tham is a PhD candidate in the Rhetoric and Scientific and Technical Communication program in the Department of Writing Studies at the University of Minnesota. His current research examines the viability of design thinking methodology and maker culture in technical communication training and pedagogy. His work has appeared in *Journal of Technical Writing and Communication, Computers and Composition Online,* and *Connexions: International Professional Communication Journal.* He may be reached at thamx007@umn.edu.

Toward Understanding Important Workplace Issues for Technical Communicators

Clinton R. Lanier

Abstract

Purpose**:** This article surveyed technical communication professionals to find out what issues they believed were the most important of the past five years in order to better understand the technical communication workplace and its demands.

Method**:** The article used an online survey to elicit responses from a specific pool of practitioners. The professionals surveyed were members of the Society for Technical Communication.

Results**:** The survey received 203 responses that were coded and categorized, resulting in 677 individual subcategory entries.

Conclusion**:** The survey comments were sorted into four broad categories: technology, information design, the technical communication field, and approaches to writing and designing information. Relationships and connections within and across these categories are further explored.

Keywords**:** trends, education, training, workplace

Practitioner's Takeaway:

- The technical communication workplace is going through a number of changes due to a wealth of factors. These factors include new technologies with which users are consuming information leading to new expectations for information design and delivery.
- The technical communication field is changing as pressures from workplace changes will require technical communication professionals to learn new skills and take on new responsibilities and jobs, such as multi-media and video production.
- Familiar technologies and methodologies are still important, even those that have been in use for 10 years or longer. Yet, these technologies and methodologies are being used or applied differently than they were before.

Clinton R. Lanier

Essential for educators is understanding what issues, trends, or movements are taking place beyond the academy to ensure students are being given the most current information possible. However, this is not always so easy to do. Educators' schedules are often filled with heavy teaching loads and scholarship requirements that make it difficult to spend time in the TC workplace. Staying up to date with the day-to-day goings on of TC professionals often proves challenging. It is equally important for those working in an industry to understand the newest or most relevant methodologies, competencies, and tools to ensure they stay competitive and carry out their work as best they can. Failing to do so consigns professionals or organizations to stasis while their competitors (in either an individual's workplace or an organization's industry) move ahead. Toward both of these ends, I sought to better understand what Technical Communication (TC) practitioners felt were the most important issues in the field to have emerged over the past five years. These issues included trends, movements, technologies, theories, or methodologies, and were revealed through a survey of 203 TC professionals.

This article discusses the survey, its findings, and its importance in relation to the field and instruction of TC. The results help to better inform researchers and professionals about what knowledge domains and competencies may be considered important within the discipline by those who are actually in the workplace. The study itself joins other studies carried out over the past few years that provide insight into what the profession of "technical communication" really means.

The subsequent literature review discusses many of these studies and is then followed by the methodology used in the present study. Finally, the results and a discussion follow with a brief conclusion noting major implications.

The Search for Understanding What Issues Are Important in Technical Communication

Fortunately, in the case of TC, many researchers have realized the need for consistently understanding the activities and trends in the field and have conducted a wealth of studies addressing this subject. In particular, some earlier and more current studies have attempted to better understand the skill sets necessary for TC

through conversations with or surveys of people working in some aspect of the discipline.

Rainey, Turner, and Dayton (2005), for example, surveyed TC managers to identify what skills or knowledge domains may be important to TC professionals. The survey of 67 managers identified abilities they felt new TC professionals should have upon entering the profession, including the ability to collaborate, to communicate clearly, and to be self-motivated. The survey also identified technical skills, including information products that TC professionals should be able to create. These included working with and producing PDF documents and online help systems. The technology skills included knowing word-processing and document-design software. This study, though extensive, is now quite dated, and the technical competencies discussed are especially out of date. However, it does serve as a great starting point for other researchers who focused on TC skills and competencies in the workplace as viewed by managers and supervisors.

More recently, Kimball (2015), Dubinsky (2015), and Baehr (2015) collaborated on an extensive research project, publishing separate articles, for a special issue of *Technical Communication* in order to understand what supervisors at a handful of large technology companies believed were the necessary skill sets and competencies of TC professionals. Their study began with eight participants but ended with only five, and was therefore much smaller in scope than the study by Rainey et al.; however, it went beyond the survey instrument and included extensive interviews and exchanges of information similar to a focus group. In short, many of the competencies and skills reported seemed fairly similar to those discussed a decade earlier. Most important to these supervisors, according to Kimball, was "content development," which was just barely more important than the skill of writing. The third most important set was "working in teams" (similar to "collaboration," which was in about the same position in the Rainey et al., 2005, study) followed by "critical thinking" and then "audience analysis."

Following these "soft skills" (as Brumberger and Lauer [2015] note they are often called) come more technical knowledge domains. These include information architecture, XML, DITA, and knowledge management. Kimball notes that this suggests "participants recognized these skills as

Understanding Workplace Issues

related and important, but not as urgent compared to the more traditional technical writing skills" (2015, p. 139).

In the same study, but in a different article, Dubinsky (2015) further explores these competencies, focusing on changes within the TC field and how professionals and educators should react. According to the TC managers and supervisors, the primary type of products created consist mainly of those that have been most commonly associated with the profession, namely documentation plans, FAQ's, instructions, online and embedded help, and user manuals. Further down the list were how-to videos (ranked 6), Web-based training (ranked 21) and websites (ranked 22). There was no ranking of social media or other, newer forms of communication. This may be due to the fact that participants ranked documentation types according to a list published on the website, Tech Whirl (http://techwhirl.com/what-is-technical-communications/), and used by the researcher. However, Dubinsky does note later on that "few of the participants indicated a deep integration of [social media] tools into the technical communicator's work" (p. 126).

Also of note in Dubinsky's (2015) interviews with these TC supervisors was their discussion about the impact resulting from shortened development cycles. These abbreviated cycles were caused by several forces, but many of the departments and TC professionals represented by these managers seemed to face shorter deadlines for their work. One approach to a new reality of compressed development cycles that was discussed by name is called "Agile Scrum methodology" (p. 128).

A more robust study conducted by Blythe, Lauer, and Curran (2014) elicited responses from professional and technical writers themselves (rather than managers or supervisors as in the previous studies). Blythe et al. surveyed alumni from 22 different higher education institutions that graduated professionals in technical, professional, business, or scientific communication. In all, they garnered 257 responses from 2,000 potential participants. The focus of this study was to identify what type of writing professional and technical writers compose in the workplace, and then use those types of written products as starting points to better understand the modern professional and technical writer. Regarding the types of written communication

they often engage in, the findings seemed to align with those from Dubinsky (2015). Email topped the list, but that was followed by instructions/manuals and then websites. Toward the bottom of the list were products like infographics, press releases, and, finally, usability materials. In addition to questions about audience and collaboration, Blythe et al. (2014) also asked respondents to tell them what types of technologies they most often used to create the products they recorded. The responses included word processing software, desktop publishing software, social networks, and search engines.

Additional studies help us understand the current trends in TC, including Lanier's (2009) research that was subsequently updated and expanded by Brumberger and Lauer (2015). Each of these studies used job ads as the source for determining what kinds of skills and knowledge employers are requesting from technical communicators. These two studies, alongside those discussed earlier, help us understand what expectations employers have for TC professionals, and they also provide us with a wealth of information about the types of skills and competencies that TC programs at universities might keep in focus.

Interestingly, of all of the studies cited in this section, only one used professional and technical communicators as sources of information. The others used the points of view of employers or supervisors (including the job ads, written most likely by supervisors). Thus, the information they provide must be viewed through the lens of someone not necessarily performing the daily tasks or projects undertaken by TC professionals. In contrast, the current study sought to survey practitioners in the field.

The current study complements previous research but is vastly different in its approach. Rather than discussing what skill sets were important for TC professionals, I wanted to understand what current issues they viewed as important. I define *issues* in this study as theories, technologies, or trends associated with the practice or field of technical communication. As an educator, I believed that this approach would help me to better understand the trends I need to discuss in TC courses. Further, by trying to understand sets of "skills" or "competencies," I discovered many other important aspects of the field were not discussed. The next section discusses the methods and approach I used in this research.

Methods

Similar to the previously cited Blythe et al. (2014) and Rainey et al. (2005) studies, I chose to use a survey as the means of data collection. Although interviewing is the ideal method for gaining a vast amount of rich data, it is often complicated, takes more time, and the participant set is often quite small (as demonstrated by the collaborative study of Kimball [2015], Dubinksy [2015], and Baehr [2015]). To maximize the number of participants, I used an online survey system via Google Docs.

Online surveys have been widely studied by researchers and are found to be efficient and trustworthy methods of gathering information from a population. According to Granello and Wheaton (2004), the benefits of online surveys include "reduced response time, lower cost, ease of data entry, flexibility of and control over format, advances in technology, recipient acceptance of the format, and the ability to obtain additional participants" (p. 388). Similarly, Wright (2005) suggests that online surveys give researchers great access to specific populations that may not be accessible otherwise.

To reach as many potential participants as possible in my chosen population (TC professionals), I requested help from the Society for Technical Communication (STC), the largest professional society for those in the professional, scientific, and technical communication fields. I was allowed to send a single email request for participants to the STC email list of members who accept 3rd party emails, which was approximately 4,100 members (Liz Pohland, personal communication, January 13, 2016). I was also allowed to join the STC LinkedIn group (with 12,132 members) and post a request for participants there.

The use of STC could certainly be viewed as a limitation for this study, as it obviously narrowed the population that could potentially respond to my request. However, the ease with which I could reach a large pool of professionals in the TC field made the convenience of access outweigh the potential diversity another route may provide.

Further, I wanted a broad set of participants for this study, so I made the participation requirements as loose as possible. In order to participate, I required participants to be TC professionals (rather than instructors or researchers) and that they be based in

the United States. Also, to ensure the highest possible number of responses, I focused on making the survey as short as possible because past studies have found that shorter online surveys produce a higher response rate (see for example Deutskens, Ruyter, Wetzels, & Oosterveld, 2004).

The email was sent January 30, 2016, and the LinkedIn post was made on January 25, 2016. The survey was active until April 26, 2016. In that time, the survey received 209 responses. After initially combing through the results, I eliminated six responses either because of missing information or because the respondents indicated they were instructors or professors instead of practitioners.

Aside from demographic information (role and years of experience), I asked participants a single question: "Please list up to 10 of what you see as the most important developments (such as theories, technologies, trends, etc.) for technical communication over the past five years." This question aimed at better understanding the skills, technologies, tools, and products TC professionals view as important. It would also provide a list of information to evaluate and analyze. Further, I believed the question "What was important for TC professionals to know?" had already been asked, and so I decided to structure mine differently. The answer to my question, I believed, would inherently demonstrate what TC professionals feel is important in their jobs, education, workplace.

There may be concerns about using an open-ended question for this study. A chief concern may be that respondents have too little information to form a proper response. Further, some may consider open-ended questions much more difficult to analyze than closed-ended questions (Roberts, et al., 2014). And after all, any interpretation of the responses could be drawn from the theoretical expectations of the researcher. Such concerns, however, can be assuaged by using a structured coding process (Flick, 2014).

Further, I wanted to get to the thoughts and opinions of the respondents. Closed-ended questions are drawn from a definition created by the researchers or someone else. In Dubinsky's (2015) study, the documentation types he asked his handful of participants to rank came from a popular blog about technical communication. There is no explanation on the blog about where these documentation types came from—what research went into this classification.

Understanding Workplace Issues

And, as I point out in my earlier discussion, some documentation types (like social media) were completely missing. Therefore, I believed an open-ended question would "provide a direct view into the respondents thinking" (Roberts, et al., 2014, p. 2).

Coding and Analysis

The resulting survey responses were compiled by Google into a spreadsheet, which I subsequently downloaded. I initially reviewed the list and excluded responses that identified the participant as anything other than a TC professional (so "Assistant Professor" or "Technical Communication Instructor" would be excluded). Using an Excel workbook, I then began analyzing the responses and created categories within which responses could be grouped. This procedure is drawn from Flick (2014) and utilizes the stages of open, axial, and selective coding. In the first step (open coding), the researcher begins tying together distantly related concepts into large, loose categories. These are subsequently refined in the second step (axial coding), as relationships begin to emerge between different, smaller categories. Finally, the last step (selective coding) finds connections between different sub-categories and generally attempts to find causal or other types of relationships. I did not use secondary raters for this analysis, because I was not quantifying the data but instead making connections between data points. And while I recognize that this may be a shortcoming, additional raters are no guarantee of reliability or validity (Armstrong, Gosling, Weinman, & Marteau, 1997).

In the Open Coding stage of my analysis, I began selecting words, phrases, or ideas that were common across numerous responses. For example, I quickly found that the acronym "DITA" was recorded in a large number of the participants' comments, so I created a column labeled "DITA" and placed each occurrence into it. If the response included context, such as "using DITA to write," then I included the context as well. The result was 236 different categories at the end of the Open Coding stage.

I classified phrases according to what I believed was the focus of the idea encapsulated in them. In the example I listed above, "using DITA to write," some may argue that it should be placed in a category about writing because writing is mentioned. I thought, however, that the focus of the comment was on DITA and that is the important point being made, and so I placed the phrase in the DITA category. This allowed me to then gather all the points about a particular topic and then analyze them individually and find overall connections. Thus, in my conclusions, I connect the importance of various types of technology, both new (social media) and old (DITA) to current approaches to documentation, tying the categories together and better understanding this issue.

There were many of these occasions in which responses were similar but not the same. For example, one participant wrote "designing for multiple formats, such as web-docs, manuals, help files, etc." while another wrote "designing for multiple devices, especially mobile." They both seem similar, especially when they suggest "designing for multiple" things, but they had different considerations. It was during the Axial Coding stage that I weighted the significance of the differences and either left them in their own columns or placed them together. In this example, I left them in two different columns/categories, "Structured Content" and "Mobile Platforms." At the end of the Axial Coding stage, I reduced the number of categories to 57.

Although my coding method demanded that I presume to understand what the respondent meant in his or her comment, I tried as much as possible not to assume too much. For example, many responses included the technology API (Application Program Interface) without any context. Still others may have included something like "growth in API documentation." I put the first into a single category and the other into a different category because although the second specifically mentioned a genre of documentation (API documentation) and a point about that genre (that it is growing), the first merely mentioned the technology. Rather than assume the respondent was making the same point as the second, I placed it into its own category. Naturally, then, there are instances where different categories resulted that seem similar but which are, in fact, different.

If there were cases in which a phrase could potentially fit into two categories, yet there was nothing else that would accompany the phrase or term in that category (thus making it a category of one), I kept it in the other with related phrases or terms. This allowed me to gather phrases into a group that would otherwise be in disparate categories spread throughout the results and lacking any context to analyze.

In the last stage, Selective Coding, I tried to find relationships between or among the different categories. If relationships did exist, I placed the columns next to each other in a different worksheet. Ultimately, four main relationships were identified, and, thus, four categories emerged to contain the subcategories created in the Axial Coding stage. It is important to understand that the process does not end by creating these four categories. These are, in fact, merely convenient ways of placing subcategories that have a loose but certain relationship. Once all the categories have been formed, then the analysis continues by examining each comment individually and looking at large-scale implications of the information.

The four main categories defined in the Selective Coding stage were the following:

Issues concerning technology

Here, I placed any comment specifically mentioning a type of technology related to the work that TC professionals do. Most often, these comments were single words without context. Rather than assume to know what the respondent meant, I placed the term or phrase here. Some respondents mentioned specific software programs by name while others may have mentioned a type of technology or what the technology does.

Issues in information delivery

This included the trends or issues concerning the methods of delivering information, such as video, hard-copy documents, PDF files, or online help documents. It additionally included delivery platforms and considerations made for delivering to different platforms. Finally, the category includes changes in methodologies or technologies that affect the delivery of information.

Issues in designing information

Discussions of different writing methodologies and approaches to designing or writing information were placed in this category. Also included were issues that affected how information is being designed. Examples might include minimalism (as a methodology) or Agile Development (as a trend that affects the way TC professionals work).

Issues in the technical communication field

This large category included any issues relating to the discipline of TC, including professionalization,

off-shoring, or similar concerns. I also placed comments referring to the role of the TC professionals, training, or skills required, and any duties or tasks they may be expected to carry out while designing information.

The following section discusses the concepts isolated within each broad category and specific responses found in each.

Results

This section provides the results of the survey, specifically a description of the survey participants and the results of my response categorization.

Of the 209 responses received, I analyzed 203 responses from participants who self-identified as TC professionals. The number of years that participants reported spending as TC professionals ranged from 1 to 45, with a median of 15 years as a TC professional. The participants self-identified with 106 different titles. The most common titles were "Senior/Lead/Principle Technical Writer" (51, or 25%), "Technical Writer" (35, or 17%), "Technical Editor" (6, or 3%), "Technical Writer and Editor" (5, or 2.4%), and "Information Architect" (4, or 1.9%). I did not ask participants to identify what industries they worked in and therefore do not know whether they are biased for certain industries over others.

I asked participants to list up to 10 of the most important issues, and the average number listed in the resulting comments was 4.6. The responses averaged 37 words each with a range of 7 to 380. In total, I listed 667 comments after coding and categorizing. Table 1 displays the number of comments included in each category.

Table 1. Number of responses included in different categories

Category	Responses
Technology	237
Information Delivery	155
Designing and Writing Information	143
The Technical Communication Field	132

The following sections list the subcategories for each broader category and then identify and briefly discuss the number of responses in each.

Issues Concerning Technology

A total of 237 comments discussed a variety of issues surrounding technology (Table 2).

Understanding Workplace Issues

Table 2. Breakdown of categories and number of entries in trends and issues concerning Technology

Issues Concerning Technology	Responses
DITA	39
Writing Software Tools	35
New Media	34
Cloud-based Applications and Apps	23
Content Management Systems	22
XML	21
Content Management Tools	17
Web-Based Markup Languages	15
Wikis	9
Open Source Software Systems	6
Graphics and Video Technologies	6
API	4
Metadata	4
E-Learning Software	2

DITA and XML

Many of the comments included here lacked context; instead, participants simply listed a technology. This was especially true for the most mentioned item, DITA (Darwin-Information Typing Architecture), which was always included without explanation (39 times).

And though DITA is an XML model, most included both of them in a list of items, again with little context. Four responses added a bit more information about the inclusion of XML (which was included a total of 21 times), including two that responded, "XML authoring," one that said, "The burgeoning use of XML as a content architecture," and another that said, "XML as a content architecture." I added them here because, despite the small amount of context, I believed they were still too general to include in other categories.

Writing/information design tools and software

I placed 35 comments into this category. Of the comments included, 17 specifically cited software tools by name. And although I do not mean to privilege any particular software over others, I think it is important to list them because it identifies those tools that are viewed as important by the TC professionals who participated in this study. These were the only software tools mentioned by the 206 participants. The tools mentioned (and the number of times they were mentioned) follow:

- MadCap Flare (9)
- FrameMaker (3)
- RoboHelp (1)
- Adobe Acrobat (1)
- Adobe InDesign (1)
- Acrolinx (1)
- Prezil (1)

There were also a number of mentions of categories of writing tools that did not include a product name, including "HAT – Help Authoring Tools" (1), "use of agile applications" (1), "automated style/grammar checkers" (1), and "XML authoring tools" (1).

Similarly, some participants mentioned the qualities of the software tools: "Software that allows you to focus on content without having to deal programming etc"; "Software contributions to make formatting easier"; "Improvement of XML authoring tools to be less intrusive/disruptive to writing process."

Lastly, there were seven mentions of "Structured" or "Single-source" authoring tools without other context.

New media

The third highest number of responses (34) fell into the category of New Media. Of these, "Social Media" was specifically mentioned in 25 responses. Few specific platforms were mentioned, but those that were included LinkedIn (1), Facebook (1), Twitter (2), Instagram (1) and YouTube (4). The remainder of responses mentioned social media (or networks) more broadly.

Within this category were many cues to the respondents' beliefs about social media. Three people alluded to the "rise," "growth," or "explosion" of social media platforms. Three respondents commented about "incorporating" or "integrating" social media into product deliverables or even "replacing formalized manuals." Two discussed it as a medium for communication: one "between information developers and information users" and the other as a mechanism for "practitioners to exchange ideas." One person cited social media as a resource "for product support" while another similarly wrote as an issue, "[h]ow to quickly respond to customer feedback via social media and/or an online documentation platform." These were very disparate comments, and there was no consensus as to the use of social media. Therefore, I believed it better to include such comments into the New Media category.

Clinton R. Lanier

It is important to point out that though many participants included social media, not everyone seemed to appreciate it. A single response was explicitly negative about social media: "Social media - pressure to tweet and use other forms of social media even when those might not be the best methods for certain types of communications."

Cloud-based applications

Comments that mentioned either cloud-based applications (or apps) and software were included 23 times. Three comments mentioned specific products, including "Office, Adobe products, etc," another mentioning "MS Word," and still a last mentioning "Adobe Creative Cloud," which is a platform from which cloud applications can be downloaded.

Three responses specifically mentioned cloud-based applications in the context of TC professionals. One cited "New cloud authoring tools," another mentioned "cloud-based authoring tools," and a final response stated "Cloud-based authoring and publishing tools."

Two responses specifically mentioned these platforms in terms of project management and collaboration, with one stating "[a]ccessing cloud-like repositories to access data and work product from anywhere to make travel and customer support easier." Similarly, another response cited "apps that employees can access from laptops, iPad, and iPhone." Still, another mentioned "cloud-based information sharing," but it is not clear exactly who is sharing the information or what information is being shared.

Content management systems

A Content Management System (CMS) is defined by Clark (2008) as a digital technology "that assists in content management by simplifying and automating the processes of the creation, approval, storage, retrieval, versioning, re-use and delivery of content objects" (p. 39). A number of individual tools combine to enable the system to carry out these tasks. As individual tools, without the system to tie them together, they are not considered a CMS. Twenty-two (22) participants mentioned some form of Content Management System (CMS) in their responses. The types of CMS varied: five people mentioned Component Content Management Systems, two mentioned Document Management Systems/Software, and the rest referred to Content Management Systems.

Two people also mentioned a specific Web-content management system, Wordpress.

Few participants gave any context for their answers. One mentioned the "importance" of CMS, and another mentioned the "proliferation" of CMS. Lastly, one cited them in reference to "simplified (i.e. no XML required)."

Project management tools

There were 17 references to various project management software tools. The different types and number of times they were mentioned are as follows:

- Tools that made collaboration easier (5)
- "Doc repositories" or "version control" tools (4)
- "Project tracking and task" tools (2)
- Review and editing tools (2)
- Online style guides (2)
- Google as a tool to easily conduct research (2)

Though document repositories and version control tools are components of a CMS, they also exist outside of content management systems as standalone project management software tools. The comments neither provided the context needed to associate the tools with content management systems nor identified the types of projects the tools are used in. I therefore placed the comments about document repositories and version control tools here.

Web-based markup languages

Nine respondents mentioned HTML as an important technology, with eight of those specifically mentioning HTML5. Five referenced CSS as important (one of those was specifically CSS3). Finally, there was one reference to "J-query *[sic]* and client-side scripting languages."

Wikis

Nine people cited Wikis as an important technology. Only three mentioned "Wikis" (with one instance of "XHMTL-based wikis") without context. The rest provided more context, including four that specifically cited wikis in terms of "end-user documentation" or "help systems." Another cited "wiki-authoring" and another responded with "Wiki as a content development and delivery platform." I believed it made sense to tie all instances of Wikis into a single category rather than distribute each to different categories.

Understanding Workplace Issues

Open-source software

There were six references to Open-Source Software, including three that mentioned GitHub, which is a repository for open-source software projects. Two mentions were more generic, (meaning without context) but one provided more context, stating "open development environments = github *[sic]* is one example, we all see every commit, every word, every piece of code." One response mentioned "open access" and another mentioned "common sourcing." The last referred to the "devaluation of proprietary systems like Author-It and the introduction of more common open source XML systems."

Graphic/video software

There were six mentions of the availability of graphic or video software. Of these, two specifically mentioned screen-capture technologies, two mentioned video software, and two mentioned graphic software. Of these, two refer to software by name, including "Adobe Suite" and "Adobe Captivate."

API, metadata and e-learning software

Four comments mentioned APIs (Application Program Interface). This is a technology that TC professionals typically write documentation for; however, I include this in Technology and not another category because they do not specifically discuss documentation, only the APIs. One comment mentioned the "Increase in API use"; two specifically mentioned REST APIs, including "Apis *[sic]* especially rest"; and the other stated that "REST APIs are less 'atomic' than SOAP APIs, and so need different structure."

Four responses cited metadata as an important technology in the field, while two cited e-learning software. In the case of e-learning software, one merely stated "eLearning platform" but another cited the "[a]dvancement of eLearning creation tools to the point of requiring specific, specialized training--possibly defeating the previous Rapid Authoring capability advancement."

Issues in Information Delivery

A total of 155 comments discussed issues surrounding the delivery of information. These comments were distributed among 11 categories (Table 3).

Table 3. Breakdown of categories and number of entries in trends and issues concerning Information Delivery

Issues in Information Delivery	Responses
Mobile Platforms	49
Multimedia	28
Replacing PDF & Traditional Manuals	21
Designing for Multiple Formats	14
Responsive Design	14
Designing API Documentation	7
Designing Online Documentation	7
Designing Online Help	5
Designing for Augmented Reality	5
Changes in Search Mechanisms	3
Designing Interfaces	2

Mobile platforms

By far, the most mentioned trend or issue regarding the delivery of information had to do with mobile technology as a platform. There were 22 mentions of "writing for," "mobile technology," "smart phones," or "tablets" with no other context. The remainder of the references were much more explanatory. Nine responses, for example, cited as an important issue or trend the "demand" to "design" or "develop for mobile platforms." Two responses cited "mobile help" while a third more precisely noted "[s]upport for mobile devices, making concise help even more important."

The rest of the 15 responses were quite varied, but each of them spoke similarly as those referenced above, and they further added much more context. One response stated as important the "[p]roliferation of mobile device types, and responsibility of content creators/providers to adapt/be responsive to content display. Especially in compliance to ADA requirements." A parallel response stated there were "[a]udience expectations of information anywhere on numerous variants of mobile device *[sic]*." Lastly, and related, were two responses citing a "'mobile first' mindset for technical information," and perhaps as a result, another response noted "designing content for delivery to mobile platforms becoming integral part of standard work flow."

Multimedia

Specific references to using multimedia in the delivery of information accounted for 28 responses in this category. The terms "multimedia," "videos," and "graphics" were included under this category. Two responses noted the "expectation" and the "demand" for video, while others noted the "rising integration" of video into technical documents. This last point was especially noted by several responses. One stated that, "Tech Comm [is] *[sic]* no longer just writing or even graphics—videos and demos." Another noted the "[i]ncreasing use of videos to communicate procedural information," while another similarly stated there was an "[i]ncreased delivery of non-text content such as videos." Lastly, another suggested a "[r]eplacement of written instruction with video instruction (e.g., Camtasia tutorials) in knowledge transfer."

Aside from video integration, responses referenced multimedia (5), workflow visualization (1), and infographics (1). It is also important to note that although all these respondents recognized the growing use of multimedia, not everyone agreed with it; as one comment demonstrated: "Videos (not that this is always a good thing)."

Replacing PDF & traditional manuals

I included comments specifically mentioning a move away from a format instead of a move to a format. In this case, there were 12 references to moving away from printed documentation, six references to moving away from PDF documentation, and various other shifts from older delivery types, such as the "[m]igration from compiled help systems to HTML-based documents."

Designing for multiple formats

Fourteen of the responses referenced publishing into multiple formats as an important trend or issue. For the most part, participants simply listed "publishing in multiple formats," yet one provided a bit more context: "I also think another big trend has been delivering your information in multiple formats. We no longer just produce long, linear documents. We make videos, quick start guides, training material, marketing material, etc."

Responsive design

Fourteen of the respondents referenced Responsive Design as an important issue or trend. Responsive design allows information designers, through the use of CSS Media Queries, to dynamically format their content so it best matches the platform on which it is being viewed (for example a desktop computer versus a smart phone) (Marcotte, 2010). Thus, it is a method used to structure and, ultimately, deliver information. All but one of these participants mentioned responsive design in some variety without context (that is, merely commenting "responsive design"); however, one respondent provided more context by citing a "seamless transition (through responsive design) between website and mobile device as a means of delivering information—this can significantly affect the way that information is designed and delivered."

Designing API documentation

"Growth in API documentation" and "API documentation is definitely becoming a thing" were the two more contextual responses in this category. The rest of the seven responses merely cited API documentation (in some form) as an important trend or issue.

Designing online help and designing for augmented reality

Five responses mentioned designing online help as an important issue or trend. Three were more general (stating simply, "designing online help"), but two were more specific. The first cited "[e]mbedding user assistance so it is there when needed—don't have to hunt for help," while the second stated "[t]he move toward context-sensitive and online help."

There were also five responses that reported designing for augmented reality as an important trend or issue. While four more only cited the term "augmented reality," one provided more context: "The coming shift to augmented reality, whereby the content is distrubuted *[sic]* to glasses or a visor."

Changes in search mechanisms and designing interfaces

The final two topics each held few responses. The first, Changes in Search Mechanisms, was reflected primarily in the comment, "Reliance on search over structure and indexing." The second category, Designing Interfaces, was reflected primarily in the comment, "increase in interaction between the UI and help content (more on-screen guides and text)."

Understanding Workplace Issues

Issues in Designing and Writing Information

A total of 143 comments discussed trends and issues concerning approaches to designing and writing information. These comments were distributed among 13 categories (Table 4).

Table 4. Breakdown of categories and number of entries concerning Approaches to Writing

Issues in Designing and Writing Information	Responses
Agile Development	32
Minimalism	19
Single Sourcing	14
Simplified English	14
Topic-based Authoring	13
Content Reuse	13
Structured Content	12
Usability	12
Modular Documentation	5
Every Page is One Page	3
Content Life-Cycle Management Process	2
Information Architecture/Management	2
Tailored Content	2

Agile development

The largest number of responses concerned Agile Development, the software development approach of rapid development and version release (Highsmith, 2002)—sometimes also equated with iterative development. In this category, I placed 32 responses. The majority of these responses simply mentioned "agile development" as an issue. However, a small number provided context. Interestingly, each was quite similar and suggested that a programming methodology has a major impact on the approach to documentation. One comment, for example, stated "Agile/Scrum/Continuous Delivery—Some software releases daily as features become ready. Documentation must keep up and stay ahead of the releases. Single source, topic based content is vital." Three other comments echoed this one, with one stating that this methodology "put[s] pressure on TC departments to keep up."

One comment suggested that following this trend is a mistake and seemed to suggest that it was actually in decline:

The decisive refutation of extending the Agile methodology to software documentation by requiring technical writers to continuously rewrite the documentation every few weeks, adjusting to whatever changes are being made to the software. Technical writers were once assured that it was perfectly acceptable to have much lower quality standards.

However, this sense was not shared in all responses. In fact, one directly countered this position by stating "AGILE writing teams. Yes *[sic]* you can develop good content quickly."

Minimalism

The documentation methodology called Minimalism was referred to 19 times, making it the second most cited approach to writing. While most every response simply listed the term, one comment stated, "less content is more approach," and so I placed it in this category as it states the basic thesis of the methodology though it does not name it. Another cited "(stealth) minimalism" without explaining what it meant.

Single sourcing/multiple outputs

There were 18 responses that mentioned either "single sourcing" specifically or publishing "multiple outputs from a single source." Most comments simply referenced single sourcing; however, one comment stated that "[s]ingle sourcing content has enabled us to share content more freely between our marketing writers and technical writers, bringing the two departments closer together." Another, however, suggested that "[s]ingle source authoring is not an easy challenge."

Plain language/simplified English

In this category, I placed references to two competing standards for writing—Plain Language and Simplified English. Plain Language was referred to a total of six times and Simplified English was referred to five times. The remainder of comments referred to changes in writing style, specifically that audiences expect a more casual tone in documents.

Topic-based authoring

There were 13 references to topic-based authoring. One response suggested that "topics-based authoring is now de facto standard for all mediums."

Clinton R. Lanier

Content reuse

Similarly, there were 13 references to content reuse. As for topic-based authoring, one of the responses suggested content reuse was now standard: "Management of content for reuse no longer an optional nice-to-have but at the center of the work flow."

Structured Content

I placed 12 responses into the Structured Content category. These alternated between comments noting "structured content" and those noting "structured authoring."

Usability

Usability was placed in Issues in Designing and Writing Information, because it was mentioned in the context as something that assists writers in designing information. Three users merely cited "Usability" as an issue; however, three more brought up issues related to the use of data mining to understand how users responded to the information the company provides. For example, one commented about "[t]he ability to monitor the topics in an on-line help system, which provides the documentation team the ability to narrow their focus to what appears to be the most important to the customer/end-user." Another comment, however, was more concerned about ethical issues, citing "[u]sers [sic] privacy vs automated silent data collection."

Modular documentation

Five responses mentioned either "modular" or "granular" documentation.

Every page is one page, content life-cycle management process, information architecture/management, tailored content

The final four categories comprised only nine combined responses. In this group, two comments provided context. The first concerned Every Page is One Page, an approach to writing proposed in the book of the same name by Mark Baker (2013): "EPPO (Every Page is Page One) . . . This was a complete game changer as far as I'm concerned." In his book, Baker argues for a topic-based approach to structuring information rather than an approach that relies on a sequence (like a user manual).

The second comment referenced Tailored Content and stated that there was a trend toward a "[d]emand for tailored content (only presenting content based on user preferences or profile)."

Issues in the Technical Communication Field

A total of 132 comments specifically discussed a trends and issues specific to the field of Technical Communication. These comments were distributed among 12 categories (Table 5).

Table 5. Breakdown of categories and number of entries in trends and issues concerning issues in the Field of Technical Communication

Issues in the Technical Communication Field	Responses
Changing Roles or Requirements for Technical Communicators	30
Users as Writers	25
Translation/Localization/Globalization	17
Offshoring	15
User Experience	11
Professional Development	10
Accessibility	6
Status of Technical Communication	5
Working Remotely	5
Budget Issues	4
Professional Education	4

Changing roles or requirement for technical communicators

The most frequent responses that addressed trends or issues in the TC field considered the role and requirements of TC professionals in the workplace. Of the 30 responses that fit this category, 7 observed that technical communication and marketing were growing closer. Contextual comments addressing this included "[c]ontent marketing blurring with tech com [sic]," "tech comms moving into Marketing [sic]," and "Moving technical documentation into technical marketing."

Another seven responses discussed specialized skills or domain knowledge. Examples of responses that evidence this include "Increasing requirements for tech writers to have specialised [sic] domain knowledge" and "In the last 5 years, hiring managers shifted from focusing on writing skills and experience to focusing on technical knowledge and experience."

Five responses pointed out that the roles of technical communicators are expanding. Two responses, in fact, used the same expression to state that TC

Understanding Workplace Issues

professionals do many different things in the workplace. The first stated that "[t]echnical writers 'wear many hats'," while the second gave a more expansive view, stating "[t]echnical writers wear many hats, including QA, project management, scrum management, and user experience among others."

Still, another five noted a trend in the workplace regarding how others view them. One cited "[t]he recognition of skills that technical writers can bring to the development team as usability experts and user interface designers," while another similarly noted the "[r]ecognition that technical communicators are more than 'just' writers or editors." The other responses likewise suggested that workplaces or people in those workplaces are now viewing TC professionals as "partners" in the process, rather than people delivering a "service."

The remainder of responses gave different, varied views of this trend or issue. Three discussed different, new roles or duties, like "course developer," "project management," or "content strategy." Another stated that degree or certifications are becoming a requirement in the job market. The last comment provided much more detail by discussing the "development of content curator (as opposed to content developer) as a role that technical communicators may need to take on." The respondent further stated, "[t]his recognizes that some types of content is *[sic]* already available through multiple channels/sources and it's not always best or necessary to develop it from scratch."

Users as writers

Twenty-five responses were placed in the category of Users as Writers, as they all noted the trend that users were generating their own content. In fact, seven of the responses merely consisted of a form of the comment "user-generated content." All of the responses, though, recognized that users are creating and distributing information. Some commented on the role that put users in, for example, "decentralization through the web (now everyone is a technical writer)." This thought was echoed in another comment that also spoke to the potential negative perception this could have for TC professionals: "Crowd-sourcing, meaning, forcing the question as to 'why do I need in-house TC's if the customer will anyway Google their questions?'"

Searching for and finding technical information via Google was mentioned in an additional four other comments. Further specific types of

user-documentation that were mentioned included blogs, wikis, and social media. The mechanism by which user-generated content occurred was referred to as "crowd sourced" in two comments.

Of the 25 responses, most seemed neutral (neither positive or negative about the user as writer), with the exception of the one referenced above questioning why TC professionals are needed and one other that suggested a very negative view of user-generated documentation by referencing "[a] general trend for software companies to reduce expenses by trimming technical communication staff in favor of grossly inflated fantasies that customers will document their own software by donating their employers' time through social media contributions."

Translation/localization/globalization

In this category, three responses simply noted "localization" and three noted "globalization." However, many others provided much more information. Three comments concerned translation via automation, such as "[e]nsuring (as best possible) accurate, automated translation"; and "[t]ranslations by software"; however, the third commented, "translation interfaces that are NOT machine translations." Three comments simply noted the trend of translation: "[c]ontent availability in multiple languages simultaneously within a single location"; "the increased need for documents, etc. to be translated into many languages"; and "global access to information and localizing information to different audiences and countries / areas."

The remainder of the comments considered different aspects of the category's topics, including the cost of translation, making it better, where to place translation in the process, writing for translation, and the changes to content that writing for translation requires.

Offshoring

There were 15 comments concerning offshoring—the business strategy of outsourcing certain business activities (such as technical writing) to international service providers. Twelve of these comments specifically mentioned offshoring technical communication jobs to international organizations or independent contractors. Two of these specifically mentioned offshoring to "non-native English speakers."

There were two responses, however, that noted differences in this trend. One noted "[U.S.] firms

as the competition as opposed to overseas TC's."
The other response even suggested "[c]ompanies are returning documentation departments to the U.S. from off-shore locations."

User experience

Eleven comments concerned User Experience (UX). Four of those simply stated, "user experience," while others suggested the trend of adding UX to product design and documentation. One elaborated more by adding "holistic understanding" after user experience and yet another commented about a trend to "[w]ork closely with User Experience designers and product management—even before a feature is coded sometimes."

Professional development

Three of the 10 comments related to professional development made points about changes to outlets for professionalization. Two participants specifically referenced conferences, each saying more were available but then suggesting that they have become more segmented into specialized gatherings. The third, however, also referenced STC, noting the "[d]ecline of professional organisations (eg STC) and rise of more informal groups (Meetup, WriteTheDocs)*[sic]*."

Of the remaining comments, five discussed the need for ongoing training and one noted the ease with which training was available via online means. The last comment suggested that more TC professionals need to be taught skills in "equipment manual writing" and focus less on "IT writing."

Accessibility

Six responses cited increased attention to accessibility. Two of these specifically mentioned accessibility as a legal requirement.

Status of technical communication and working remotely

Five responses suggested that the status of TC as a profession has increased. Three of these discussed technical writers being involved earlier in the development process, and one stated that the profession has "bounced back" after "a near total collapse in 2009." I argue these indicate status, because it means that the perceived value of TC professionals is increasing, both within the workplace by colleagues and by organizations that are again hiring them.

Working remotely was likewise mentioned in five responses. All these comments stated that the trend was growing and that it was easier to do so because of increases in bandwidth and technology.

Budget issues

There were four comments that discussed budgetary pressures that TC departments or projects were facing. Three of these specifically cited a trend toward using "metrics" to "prove" the value of their work. The last comment cited "[t]he shift from invisible cost center to a potential revenue driver."

Professional education

The final three comments discussed various issues concerning education. One response suggested a decline in the number of students entering TC programs while another suggested that more college programs were available than before. Finally, the last comment suggested that access to educational programs was easier due to online programs.

The following section discusses some of the more notable responses and their significance toward the practice and instruction of Technical Communication.

Conclusion and Discussion of Responses

Many of the subcategories, though separated during coding, were still quite connected, which is an expected and natural occurrence in qualitative research. This is also true for different subcategories across different parent categories. This speaks to the importance of the issue in the TC workplace.

The most obvious example of such a connection is seen in the following related subcategories that span three of the four parent categories. A full 157 responses out of 679 (23%) concerned the sum of the following issues and trends:

- DITA
- Writing Software Tools
- XML
- Metadata
- Designing for Multiple Formats
- Single Sourcing
- Topic-Based Authoring
- Structured Content
- Modular Documentation

Understanding Workplace Issues

All these subcategories are interrelated. For example, DITA is an XML Data Type Definition. It is used in certain types of software tools used by the TC community, such as MadCap Flare and Adobe FrameMaker. These tools help writers develop structured content delivered in multiple formats from a single data source. The final products are modular in design and are typically organized by topic. While many of these subcategories, such as single sourcing and DITA, have been around for at least 15 years (Rockley, 2001; Priestley, Hargis, & Carpenter, 2001), these issues are clearly still very important in the field.

However, just because some of these topics have existed for years does not mean they have been in any sort of stasis since their adoption. Rather, it is apparent from other categories and responses their use is evolving and is once again important due to new trends. This was especially revealed in the many references to adopting information for online delivery and mobile platforms. The following subcategories accounted for 96 (14%) total references:

- Mobile Platforms
- Replacing PDF & Traditional Manuals
- Designing for Multiple Formats
- Responsive Design
- Designing Online Documentation
- Designing Online Help

Organizations and TC professionals must redesign documents to accommodate new and changing technologies. Information delivery via apps or information that is simply viewed on mobile devices is becoming common place (comScore, 2016), so traditional forms of user-assistance and documentation (such as manuals and PDF documents) are being left behind. New design approaches, such as Responsive Design, are needed as TC professionals turn toward online help and documentation. Understanding how to design and deliver to multiple viewing platforms— mobile especially—with decade-old technologies is therefore an increasingly important issue.

Another interesting note is the number of responses that suggested the role of the technical communicator is changing. There were many different roles mentioned, including marketing, and the "blurring" between technical communication and marketing. If you consider the relevance of moving documentation online and then also note what was said about the ability of

users to find information via Google searches, then the "changing role" becomes much more significant. Consider someone trying to find information about performing an action with a specific technology. If the documentation is now online, there is a very good chance it will be found and used. Therefore, documentation starts taking on the role of marketing materials by spreading and promoting the brand.

Other roles included project management, user experience, and content development. Each of these was the subject of its own subcategory indicating their importance as issues or trends beyond simply stating that they are new roles for TC professionals.

The last issue on which I would like to focus is the relationship between the development of technology products and the product's associated information development. Agile Development, for example, was referred to 32 times. This is interesting, because it is not an approach to documentation but to software development. However, the use of Agile Development is changing the approach to creating the product's associated documentation because, as some responses noted, the use of Agile Development forces documentation teams to quickly produce updated materials as new software versions are released.

But perhaps the trend of moving documentation to online platforms enables this change. After all, Agile Development is nothing new. However, in the past, when organizations published documentation as hard copy manuals or PDF documents, it limited their ability to publish brief, quick documentation updates. In contrast, publishing online is more cost-effective and can be carried out more quickly.

Thus, while the technology development trend (that is, the Agile Development methodology) seems to be dictating the changes to the TC workplace, it might also be a combination of a number of seemingly unrelated factors. These include the trend toward mobile platforms as primary information consumption technologies, the responding change toward designing online documentation, and even changes in the way people search for information.

Ultimately, an extensive number of trends and issues were identified in this study, and many of them seem related or somehow connected to each other. The findings create a complicated understanding of the current TC field to be sure, but they also present a wealth of information that we can use both in the

Clinton R. Lanier

workplace and in classroom. I specifically think that most of the trends and issues coded from the survey responses demonstrate three important aspects about technical communication. First, they demonstrate how the TC workplace is changing. Second, they demonstrate that TC as a field is also changing. And finally, they demonstrate that technologies and methodologies that have existed for years are still relevant and important.

The Changing TC Workplace

The tasks and the tools with which TC professionals work are undergoing significant changes. The shift by information consumers toward mobile platforms is one of the main driving forces behind many of these changes in the TC professional's workplace. As noted in the responses, the way co-workers collaborate is affected by mobile technology and related online platforms, like social media, wikis, and even online style guides. Cloud-based applications and software, downloaded and available on mobile devices, allow consumers to access information anywhere anytime. Likewise, these same technologies allow TC professionals to work anywhere anytime.

Related to this is the high availability of digital access. Technical writers can perform their work from any location, and so associated trends include rising instances of remote working or of organizations hiring contractors and third parties that work at a distance. These include the continued issue of offshoring, but for some (as noted in the responses), it is transforming this issue so that technical communication work is being relocated back to the United States from offshore.

The tools TC professionals are working with range from the familiar to the new. As delivery platforms evolve (from hard copy manuals and PDF files to online documentation) new technologies and tools are needed. Professionals are finding more demand for multi-media, requiring a familiarity with new software applications. There is also a growing trend in changing how documentation is written, not just in terms of the platforms or tools used, but even in the tone and the language used in the information products. Participants noted the move toward either Simplified English or Plain Language. Both of these are formal movements supported by different entities, the AeroSpace and Defense Industries Association of Europe (ASD-STE100, 2015), and the Unites States

Government (plainlanguage.gov, 2011), respectively. However, participants also noted that language has generally become less formal and more casual, and that their audiences do not want what one person labeled "elevated diction."

Perhaps related, but certainly also affecting the workplace, is the rising issue of the many users who choose to create their own documentation. Survey participants noted that their audiences can find technical information in a number of places, like blogs, forums, YouTube videos, and even social media. These different channels, combined with the ease of access and the refinement of Internet search engines (particularly Google), dramatically change the dynamics of a TC professional's workplace. Whereas in the past, they were the sole provider of information to the users of their products, they are now "competing" with those same users or with other organizations publishing information on the internet.

The Changing TC Field

As noted by many others, the TC field itself and the roles of those in it are also changing dramatically. Others have suggested that technical writers are evolving into the fields of content management (Andersen, 2014) or user experience (Brumberger & Lauer, 2016), but the results of this survey suggest the changes are much more varied. I noted two responses that used the same metaphor to describe these changes ("technical writers wear many hats"). The "hats" these responses speak of include content management and user experience but also marketing, curation of information, usability quality assurance, project management, and multi-media and interface design.

Considering the changes taking place in technology, from the way people consume information on mobile platforms or through apps to the increasing bandwidth and data availability, the changing roles for professionals in TC seems natural. Technical communicators have always designed information, after all. The label "technical writer" was applied when the only medium or delivery mechanism for information was written. Now, however, as noted throughout the survey responses, this is no longer the case.

Because people can quickly and easily access information products like videos, for example, on their smart phones, they want or expect such user-assistance products. Some responses noted the rise in multi-media

Understanding Workplace Issues

integration (especially videos) in their documentation. This matches both what the users expect and what technology enables. So, while content management is certainly a role that technical communicators play, I think it is just one aspect of the field in the future, perhaps even one of many duties that information designers will have as the field continues to change.

Familiar Technologies and Methodologies Are Still Important

It was interesting to note how technologies and methodologies used for the past 10–20 years were considered important trends or issues over the past 5 years. I question why participants would include such things like single sourcing, content reuse, or even minimalism in their answers. To be honest, I did not expect these responses and instead was looking forward to new methodologies and approaches.

Minimalism, for example, was introduced by John Carroll in 1990, yet it was frequently and specifically mentioned in the responses (19 times). Similarly, single source publishing (that is, "single sourcing"), mentioned in 14 responses, was referred to as a "new technology trend" (p. 145) by Hart-Davidson in 2001. The same is true for Topic-based Authoring (Priestley, Hargis, & Carpenter, 2001), Content Reuse (Priestley, 2001), Structured Content (Rockley, 2003), and Modular Documentation (Greene, 2000). None of these are what we might consider new.

In terms of technologies, both DITA and XML were also named as important. Here, too, we see older tools included in considerations of what are the most important issues or technologies from the past five years. As a mechanism for facilitating technical writing, DITA was created in 2001, and subsequently, SGML was replaced by XML as the preferred markup language for creating documentation (Priestley, Hargis, & Carpenter, 2001). Therefore, once again, these two technologies are far from new in the field.

And, lastly, the writing software tools themselves were prominently mentioned: not only writing-specific products like Adobe FrameMaker and MadCap Flare, which have existed since 1995 (History of Adobe Systems, 2012) and 2006 (Lufkin, 2007), respectively, but also more broad responses that included the types of tools that carry out the functions of the specifically named software products (for example, the mention of "single sourcing" software).

Implications for the Workplace and the Classroom

For the workplace, it is easy to see that TC departments or professionals should expect change. Not only are the methods for creating and delivering information products changing but so are the roles of the TC professionals and perhaps the expectations for them within their organizations. It will be important to understand how these changes affect the approach to TC within individual organizations. Will they, for example, be tempted to more explicitly integrate departments so that TC will more fully or easily collaborate with marketing or other entities?

Technical communication professionals might also be expected to further upgrade their knowledge of not only technical topics but also different and more varied software tools and practices. For example, responses noted a growing call for videos and multi-media in user support products. Therefore, current TC professionals may be required to not only become proficient with the tools that accommodate such needs but also to learn the methodologies and best practices for producing those products.

Also, there will be a growing expectation in the workplace to move all user-assistance products not only to online platforms but to mobile-friendly platforms. This was noted in a number of different responses. There are many implications connected to this trend. New software tools, for example, must be measured against whether they can publish to mobile platforms, most likely through Responsive Design. Further, each new software tool and design methodology will likewise require new skills and training for existing TC professionals.

New TC professionals, however, are going to face a wealth of new knowledge skills that graduates from TC programs did not face five years ago. Undergraduate and graduate technical communication programs may have to use a broader definition of "design" than they previously used in order to accommodate a movement toward videos and multi-media user assistance. Also, TC programs will need to prepare students for online user-assistance and information products designed for virtual consumption. The participants in my study indicated a movement away from hard-copy and even PDF manuals to various types of online documentation. These ranged from context-sensitive

help systems to documentation as Web pages. This will require programs to ensure that students receive training in Web-based scripting languages and design approaches. This is especially true for mobile-based design methodologies, like Responsive Design.

Students will further benefit from learning about different roles they might play in the changing TC workplace. These roles, like marketing, may require different skills than typically taught in a traditional TC program. Finally, there are significant implications in the responses suggesting the importance of technology and methodologies from one or two decades ago. It is easy to believe that such tools or approaches are outdated and that perhaps there are other, more important issues to focus on. However, the responses made clear just how crucial the understanding of technologies like DITA and XML or methodologies like minimalism still are for TC students.

Ultimately, this study developed several new potential avenues for further research. More importantly, it provided a glimpse into where the TC profession is going from the perspective of the people actually performing the work.

References

Andersen, R. (2014). Rhetorical work in the age of content management: Implications for the field of technical communication. *Journal of Business and Technical Communication*, *28*, 115–157.

Armstrong, D., Gosling, A., Weinman, J., & Marteau, T. (1997). The place of inter-rater reliability in qualitative research: An empirical study. *Sociology, 31*, 597–606.

ASD-STE100. (2015). AeroSpace and Defense Industries Association of Europe. Retrieved from http://www.asd-ste100.org/

Baehr, C. (2015). Complexities in hybridization: Professional identities and relationships in technical communication. *Technical Communication*, *62*, 104–117.

Baker, M. (2013). *Every page is page one: Topic-based writing for technical communication and the web*. Laguna Hills, CA: XML Press.

Blythe, S., Lauer, C., & Curran, P. (2014). Professional & technical communication in a web 2.0 world: A report on a nationwide survey. *Technical Communication Quarterly*, *23*, 265–287.

Brumberger, E., & Lauer, C. (2016). Technical communication as user experience in a broadening industry landscape. *Technical Communication*, *63*, 248–264.

Brumberger, E., & Lauer, C. (2015). The evolution of technical communication: An analysis of industry job postings. *Technical Communication*, *62*, 224–243.

Carroll, J.M. (1990). *The Nurnberg Funnel: Designing minimalist instruction for practical computer skill*. Cambridge, MA: MIT Press.

Clark, D. (2007). Content management and the separation of presentation and content. *Technical Communication Quarterly*, *17*, 35–60.

Cross-Platform: Future in focus. (2016). comScore. Retrieved from http://www.comscore.com/Insights/Presentations-and-Whitepapers/2016/2016-US-Cross Platform-Future-in-Focus

Deutskens, E., de Ruyter, K., Wetzels, M., & Oosterveld, P. (2004). Response rate and response quality of internet-based surveys: An experimental study. *Marketing Letters*, *15*(1), 21–36.

Dubinsky, J. (2015). Products and processes: Transition from 'product documentation to … integrated technical content.' *Technical Communication*, *62*, 118–134.

Federal Plain Language Guidelines. (2011). PlainLanguage.gov. Retrieved from http://www.plainlanguage.gov/howto/guidelines/FederalPLGuidelines/index.cfm

Flick, U. (2014). *An introduction to qualitative research*. New York, NY: Sage.

Granello, D.H., & Wheaton, J.E. (2004). Online data collection: Strategies for research. *Journal of Counseling & Development*, *82*(4), 387–393.

Greene, L. (2000). Challenges and advantages of modular documentation. *STC Proceedings*.

Hart-Davidson, W. (2001). On writing, technical communication, and information technology: The core competencies of technical communication. *Technical Communication*, *48*, 145–155.

Highsmith, J. (2002). What is agile software development? *CrossTalk: The Journal of Defense Software Engineering*, *15*, 4–9.

History of Adobe Systems. (2012). Admatic. Retrieved from http://www.admaticitservices.com/2012/03/29/history-of-adobe-systems/

Understanding Workplace Issues

Horn, R. E. (1998). Structured writing as a paradigm. In A. Romiszowski & C. Dills (Eds.), *Instructional development: The state of the art*. Englewood Cliffs, NJ: Educational Technologies Publications.

Kimball, M. (2015). Technical communication: How a few great companies get it done. *Technical Communication, 62*, 89–95.

Lanier, C. (2009). Analysis of the skills called for by technical communication employers in recruitment postings. *Technical Communication, 56*, 51–61.

Lufkin, P. (2007). MadCap flare and the RoboHelp saga. Devil Mountain Views.

Marcotte, E. (2010). Responsive Web Design. *A List Apart*, 306, Retrieved from http://www.alistapart.com/articles/responsive-web-design/

Priestley, M. (2001). DITA XML: A reuse by reference architecture for technical documentation. *SIGDOC'01*, Santa Fe, NM.

Priestley, M., Hargis, G., & Carpenter, S. (2001). DITA: An XML-based technical documentation authoring and publishing architecture. *Technical Communication, 48*, 352–367.

Rainey, K., Turner, R., & Dayton, D. (2005). Do curricula correspond to managerial expectations? Core competencies for technical communicators. *Technical Communication, 52*, 323–352.

Roberts, M. E., Stewart, B. M., Tingley, D., Lucas, C., Leder-Luis, J., Gadarian, S. K., Albertson, B., Rand, D. G. (2014). Structural topic models for open-ended survey responses. *American Journal of Political Science, 58*(4), 1064–1082.

Rockley, A. (2001). The Impact of single sourcing and technology. *Technical Communication, 48*, 189–193.

Wright, K. B. (2005). Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer Mediated Communication, 10*(3). Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2005.tb00259.x/full

About the Author

Clinton R. Lanier is an Assistant Professor of English at New Mexico State University, where he teaches in the Rhetoric and Professional Communication Program. He has worked as a technical writer in the software industry and as a technical editor for the U.S. Army. He currently owns a digital marketing consulting practice in Las Cruces, New Mexico. His scholarship and teaching focuses on Web design and development, digital marketing, social media, user-assistance, and user-generated documentation. He can be reached at clanier@nmsu.edu.

An Integrative Literature Review of Project Management in Technical and Professional Communication

Benjamin Lauren and Joanna Schreiber

Abstract

Purpose: This article presents the results of an integrative literature review on project management in technical and professional communication. The goal of the article is to demonstrate how project management has been discussed and studied by the field. By analyzing the field's approach to project management, the article sets groundwork for research, pedagogies, and best practices that prepare technical and professional communicators to shape effective project management practices.

Method: To achieve this goal, we assembled a sample of 326 sources across academic and practitioner publishing venues from the years 2005–2016. To comprise the sample, we used targeted keyword searches to identify published work that addressed project management in technical and professional communication.

Results: Project management in technical and professional communication is often presented as an adjacent practice to other concepts or practices, such as leadership or documentation management. Additionally, project management is described or discussed primarily in terms of skills and relationships established through concepts such as teaming, collaboration, professional communication, communication theory, and education.

Conclusion: The limited characterization of project management in the existing research creates the opportunity for technical and professional communicators (TPCs) to explicitly acknowledge the complexity of project management from a rhetorical perspective. The outcome of this rhetorical approach would position TPCs to develop and shape ethical and audience-focused PM practices through their communication expertise.

Keywords: project management, integrative literature review, rhetoric, technical and professional communication

Practitioner's Takeaway:

- Project management links TPC tools and processes with organizational and team contexts.
- Project management skills are essential for developing and sustaining TPC careers, especially since teams are more often sharing in project management activities.
- Project management processes are often discussed as a skillset for TPCs to acquire rather than as a practice to be refined for different organizations, teams, and individuals.
- More methods in project management should emphasize the importance of effectively communicating with people to do complex knowledge work, an area of opportunity for TPCs.
- Acknowledging the complexity of PM as a field helps TPCs define the value of their work.

Integrative Literature Review

Technical and professional communication (TPC) has discussed project management (PM) for some time (Carliner, 2004; Carliner et al., 2014; Giammona, 2004; Lanier, 2009), and recent shifts in organizational structure, approaches to product development, process management, global economics, and team practices (see Hart & Conklin, 2006; Dubinsky, 2015; Spinuzzi, 2015) suggest it remains essential to the TPC skillset. Yet, published work on PM in TPC focuses almost entirely on practice—evaluating tools and describing processes and methods. This focus on practice has positioned PM as a skill to be acquired or developed (Dicks, 2010; 2013) rather than as a kind of knowledge used to shape how people work within and across organizations. Also, by positioning PM as just a needed skillset, TPC may be missing opportunities to critically evaluate emerging forms of PM, particularly how it informs the ways in which we work and what we produce. For a field and profession that takes great pains to explain writing as complex knowledge work (Allen,1990; Johnson, 1997; Miller, 1989; Winsor, 1999), the lack of critical engagement with PM seems almost out of character. Or, as Dicks (2013) put it, "For an area that is as critically important to technical communication as project management, it is surprising that there are not more articles in the literature dedicated to the subject" (pp. 311–312).

Given these observations on TPC work in PM, we believe the timing is appropriate for an integrative literature review of published work that brings together conversations about PM in our field. To be clear, an integrative literature review does not aim to integrate everything published about a topic in a given discipline; instead, it works to assemble "representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated" (Torraco, 2005, p. 356). In this article, we offer an integrative literature review of PM in TPC that draws from publications offered in both academic and practitioner venues.

But why is the time right for an integrative literature review on PM in TPC beyond what we've noted already? Many people who work in TPC note the field is undergoing disciplinary transformation, expanding the role and scope of our work. We briefly summarize some of these transformations in the following points:

- How technical and professional communicators (TPCs) are participating on project teams is and has been evolving. For example, Spinuzzi (2015) recently described how some teams share PM activities. On these teams, PM is not the job of a single person but an activity practiced and coordinated across a team, so TPCs must be prepared to participate in project management.
- TPCs have an important leadership role to play in the facilitation of cross-functional project work (Dubinsky, 2015; Hart & Conklin, 2006; Marchwinski & Mandziuk, 2002). Healthy communication workflows are intrinsic to effective teamwork, and TPC has important value in conversations about effective communications management (Amidon & Blythe, 2008; Suchan, 2006).
- Emerging development methodologies like Agile, Lean, Six Sigma, and so on (Hackos, 2016; Schreiber, 2017) have had an important influence on TPC practice. Understanding how these methodologies contribute to our work is key to establishing the value of TPC in leadership roles, particularly as information developers are given "autonomy to manage many day-to-day tasks" (Agile Development, para 6).
- Content management and strategy has changed who can participate in the development of content (McCarthy et al., 2011) and how technical and professional communicators organize work practices (Hart-Davidson et al., 2008). Additionally, tools and processes related to content management further shapes TPC field knowledge, organizational position, and role on teams.

These transformations, while certainly not exhaustive of every shift the field is experiencing, demonstrate the pervasiveness of PM in TPC. We believe these shifts also suggest it is a good moment to assemble and examine how TPC practitioners and academics are approaching PM so that we can critically reflect on how, as a field, TPC is contributing to the development of emerging PM practices and theories. Therefore, this integrative literature review seeks to 1) document emerging areas for PM research in TPC and 2) present a critique of existing work with the goal of identifying gaps and opportunities for future research and identification of best practices.

Benjamin Lauren and Joanna Schreiber

To provide some background, we begin the article with a brief history of PM scholarship in TPC. We continue by describing our methods for assembling the scholarship into a conversation. Next, we explain the results of our review, which demonstrates that PM is often discussed in relationship to other activities, such as leadership practices or teams and teaming. After reporting our results, we discuss implications of the findings and offer a critique of the scope of published work on PM. Finally, after discussing the limitations of our research design and results, we conclude the article with several suggestions for future study.

Brief history of PM

While documenting every event or factor that influenced the evolution of PM and PM in TPC is beyond the scope of this article, this section briefly gives key moments to show PM has historically developed in sometimes parallel and overlapping ways with TPC.

PM as a workplace practice emerged from efficiency management structures and efforts to organize work which took hold in the early 1900s (Miller, 1998). Additionally, PM grew out of engineering and science, specifically through advancements in knowledge and resulting complexities which surfaced due to product development and research (Longo, 2000). Advances in information communication technologies and flattened organizational structures required inventing methods to scale operations (Yates, 1989), so PM can also be traced across a trajectory of organizational development. Research has also traced TPC practices as foundational to the development and implementation of early scientific management work (Killingsworth & Jones, 1989), and it is these early efficiency practices which also marked the beginning of PM as part of organizational management structures.

World War II was an important touchpoint for both TPC and PM as scientific and technological products grew increasingly complex and dangerous, requiring documentation and interdisciplinary teams (see Morris, 2011). Later, in the 1960s, many of the PM processes and tools that were developed in the military became more widely adopted (for example, Program Evaluation Review Technique, or PERT), and were intimately tied to managing and improving team processes. By 1969, the Project Management Institute (PMI) was formed to act as a

hub for professionals and helped standardize PM as a practice and discipline. Later, in the 1980s, white collar managers in the United States adopted Lean principles as a way to increase profits by doing more with less (Saval, 2014). At this time, interest in process improvement remained an important concern of management professionals and was dramatized in the popular business novel *The Goal* by Goldratt and Cox (2014). In product-focused environments, technical and professional communicators often developed end user documentation. Later, the first official *Project Management Body of Knowledge* (PMBOK) was released in 1996, which created opportunities for professional training and certification in PM.

In the 2000s, PM approaches became more closely aligned with software development methodologies, like Agile development. In 2001, *The Agile Manifesto* was published. At this time, commercial software development changed how projects were managed as teams moved from developing physical products for manufacturing to developing software. As well, documentation began to move from print to screen. Effective processes of developing and publishing documentation was captured by a range of texts, including Hackos' (2007) *Information Development* (which is widely regarded as a foundational text for defining PM in the context of TPC). While more recent scholarship on coordinating work (see Pigg, 2014) certainly informs PM practices, Hackos' (2007) work was the most recent substantial contribution to PM in TPC.

As this brief history shows, PM and TPC are increasingly connected and even merge at some points. Despite shared history, TPC often treats PM as an important practice to acquire or wrestles with best methods for teaching others how to do it. Although many have argued that TPCs would make for excellent project managers and facilitators of work (see Hart & Conklin, 2006; Potts, 2014), we also believe that our field has an important role to play in shaping PM as a social practice.

Method

As our introduction and brief history of PM shows, PM has been discussed as an important skill, particularly as TPC work and roles transformed. However, we ask a central question: What has TPC as a field more recently offered about PM knowledge? To answer this

Integrative Literature Review

question, we used Toracco's (2005) work to shape our analysis of published work, using elements of grounded theory (Charmez, 2006) to organize and locate emerging themes as we read each article in our sample. We captured articles broadly with a range of keywords and refined our sample with focused readings to determine which articles addressed PM. To further guide our analysis of PM in TPC, we asked three research questions:

- How is PM described as a *practice*?
- What communication *theory* is studied in the context of PM?
- What PM *methods* are being discussed?

Integrative literature reviews help to generate new knowledge about a topic studied because mature topics have more room for critique, whereas the goal for emerging areas is to simply capture the conversation. Torraco (2005) explained, "Most integrative literature reviews are intended to address two general kinds of topics--mature topics or new, emerging topics" (p. 357). Additionally, Torraco suggested mature topics and emerging topics have different goals in mind. Our research is specifically designed to study a relatively mature phenomenon (because we have accounts of PM in TPC) that has recently undergone shifts in disciplinary practice.

Sample

To start, we identified major publication venues and platforms in TPC. Since we were specifically interested in emerging accounts of PM in TPC, we identified the date range January 2005 to September 2016. To capture academic conversations, we focused on journals whose mission was technical communication, professional communication, or both. We identified journals central to technical and professional communication and those that directly overlap. To capture practitioner conversations, we included *User Experience Magazine*, *TC World*, and *Intercom*. Additionally, since both academics and practitioners publish proceedings papers, we searched two popular conferences: the International Professional Communication Conference (ProComm) and the Special Interest Group on the Design of Communication (SIGDOC). We also searched using Google, Google Scholar, and Amazon.com to identify major textbooks and edited

collections. We defined *edited collection* broadly and included two special issues from *International Journal of Sociotechnology and Knowledge Development* because they were edited by TPC scholar Guiseppe Getto and focused on user experience PM. To make sure we identified appropriate texts as we assembled the sample, we engaged in an ongoing dialogue about project scope as we searched. We included articles from the following journals/proceedings in our final sample:

- Technical Communication
- Journal of Business and Technical Communication
- Transactions on Professional Communication
- Technical Communication Quarterly
- Business Communication Quarterly
- Special Interest Group on the Design of Communication (SIGDOC) Proceedings
- Journal of Technical Writing and Communication
- International Professional Communication Conference (ProCommO Proceedings

Next, we searched abstracts, keyword lists, and/or metadata (if the database included such information) of articles in each publication for our time period. In order to broadly capture PM in TPC, we used the keywords "project management," "management," "project," "teams," "collaboration," "Agile," "Lean," and "leadership." We also included slight variations of these terms, such as "project manager," "teamwork," or "project leader." To isolate project management and to make our sample manageable, we did not explicitly include phrases or terms that included "management," such as "knowledge management," "content management," "information management," "documentation management," "crisis management," "impression management," or "boundary management" (some of which have already received their own integrative literature reviews; see Andersen & Batova, 2015). Since the goal of this project was to focus on PM specifically, we only selected articles for our sample that directly tied themselves to PM in a substantive way. From our initial searching, we assembled 326 potential sources after removing book reviews and other similar texts. To further narrow our sample, we evaluated each source to determine its relevance to PM, finding that 128 texts of our initial sample substantively discussed PM. Also, throughout the

writing and revising process, we continued to review our sample through additional searching as previously described to make sure coverage was appropriate.

Iterative Coding Method

To evaluate our sample, we developed starter codes and piloted them on a small portion of the work to norm our approach. We drew from grounded theory (Charmaz, 2006) to develop an iterative and systematic process for refining our codes and analyzing our sample, giving "priority to showing patterns and connections rather than linear reasoning" (p. 126). For instance, in testing our original codes, we discovered that methods and tools were often interchangeably used, and that, to capture how PM was defined, we needed to code more broadly to capture both direct definitions of PM and definitions of PM that were focused on solving particular problems. This approach helped us focus on relationships and linkages between PM and several areas of interest to TPC, and our coding scheme was useful in discovering other broad TPC knowledges and practices. Table 1 demonstrates how we revised our starter codes. As well with our sample, we regularly reviewed our codes throughout the coding process.

Themes

After reading through the sample, we assembled the findings by emergent themes produced by each reading. We moved summaries of the texts into a document and developed themes through an iterative process of analysis and reanalysis (Charmez, 2006). Once initial themes were created, we continued to reevaluate relationships between the themes to collapse our summaries into more specific categories, using our research questions as broad organizational categories for the themes. For example, we found a small number of articles about technology as they related to PM (as opposed to technology used to facilitate PM) and space as relates to PM; we combined these articles into a theme about environmental factors that influence PM. Our findings are more fully detailed in the next section of the article.

Results

We organized our results according to 1) a quantitative breakdown of the sample; 2) emerging themes; and, 3) how the results addressed our research questions.

Sample Breakdown

Examining the breakdown of our sample reveals some useful insight. Figure 1 demonstrates the overall breakdown of genres included in the sample. The largest category of our sample was trade magazines (*Intercom*, *TC World*, and *User Experience Magazine*). The second largest was journal articles, followed by textbooks, academic monographs, special issues, and classroom/instructional texts. Lastly, proceedings papers (*SIGDOC*) made up the smallest amount of our sample. Often, the published cases focused a great deal on describing practice or offering advice, echoing the sentiments of Dicks (2013) that much of the published work on PM in TPC over the last ten years has been largely descriptive and/or prescriptive.

Table 1. Revised code categories after pilot

| Code	Abbreviation	Definition
Identity/Role of Project Manager on Team	#ID	The power relationships expressed between leadership and team (or lack thereof) and/or purpose of the leader (?)
TPC Problem or Question	#TPCprob	What is the TPC research question or problem/issue the author is trying to address?
Communication Theory and Method	#CTM	How a communication theory is chosen and applied
Implementation Methods & Tools	#IM	The project management methodology and the methods in support of it. For example, management philosophies and related tools/frameworks. Can be lean (philosophy/method) and tool (agile) or lean (philosophy/method) and tool (kaizen) or agile (philosophy/method) and tool (scrum)

Integrative Literature Review
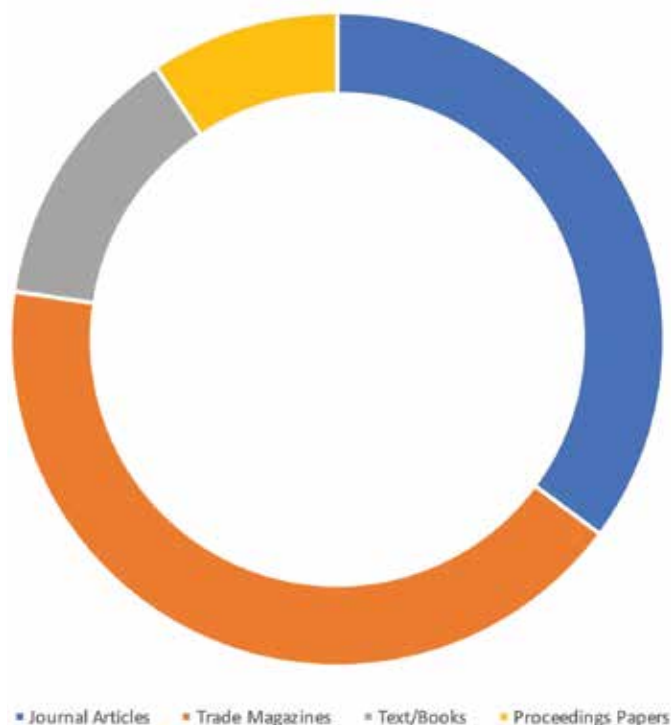
Figure 1. Breakdown of final sample by type (n=128)

Additionally, PM was rarely the primary topic in our sample, though many texts established links between PM and other workplace activities and experiences. Once again drawing from Charmez (2006), we identified this quality as "relationships." As a point of order, we organized the results by aligning them with the corresponding research question. We also would like to note, due to space constraints, we did not discuss each article from the sample in detail.

Below, Figure 2 demonstrates the breakdown of our sample by academic publishing venue. The largest sample was from *Technical Communication* (TC)*,* followed closely by both *Technical Communication Quarterly* (TCQ) and *Transactions on Professional Communication* (TPC). The topic of articles published in these venues varied, but there was considerable interest in describing and teaching current PM practice to students. Coincidentally, the sample size was similar across the *Journal of Business and Technical Communication* (JBTC), the *Journal of Technical Writing and Communication* (JTWC), and *Business Communication Quarterly* (BCQ). As with the other journals, the topic range of articles in JBTC, JTWC, and BCQ varied. The abbreviations used here are the same in Figure 2.

Figure 3 illustrates the trade magazines included in the final sample. We discovered that trade magazines appeared to have most interest in demonstrating the practice of PM in different organizational circumstances. As the majority of our sample (by just 7%), the articles published in trade magazines were instructive and useful for professionals interested in developing individual careers. Additionally, it appeared there was a similar focus on PM across both *TPC World* and *Intercom. User Experience Magazine*, or *UX Magazine*, discussed PM in the context of user experience, which overlaps with TPC. During our reading, we noted some redundancy across the topics and experiences detailed in trade articles.

Emerging Themes

Because few articles in our sample focused only on PM in TPC, the emerging themes we discovered describe relationships between related concepts and practices and PM. While we believe there is much to be gained from the results of our literature review, we wish to highlight two overarching themes:

• PM is often presented as an adjacent practice to other concepts or practices (for example, leadership or documentation management),
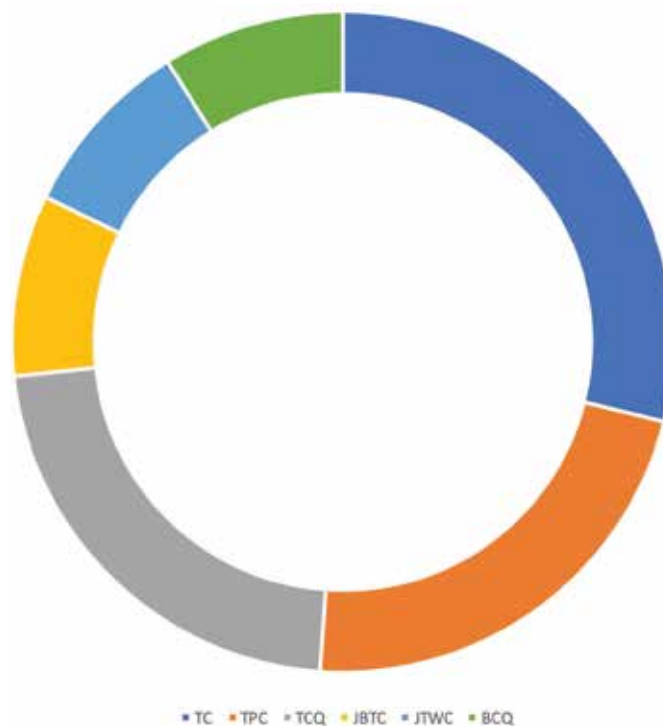

Figure 2. Journals in final sample (n=45)

Benjamin Lauren and Joanna Schreiber

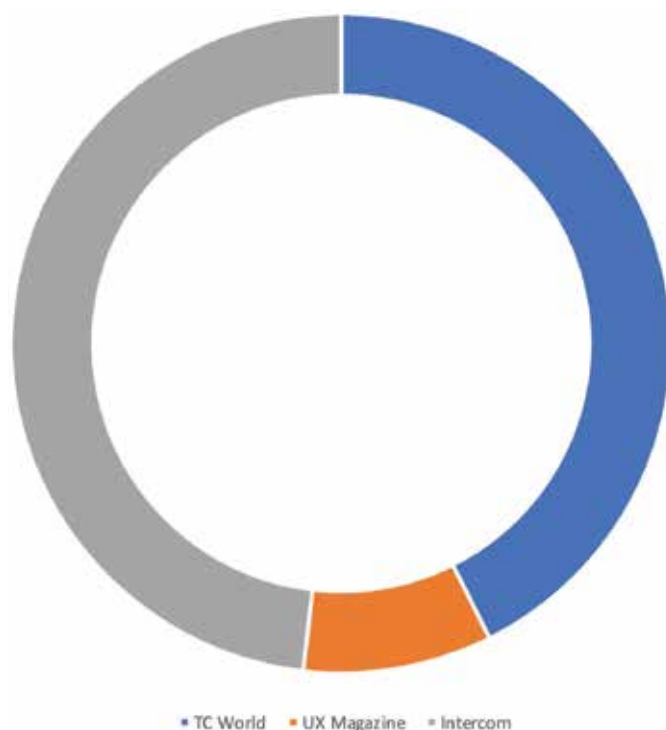● TC World   ■ UX Magazine   ■ Intercom

Figure 3. Trade magazines in final sample (n=54)

instead of grounding these practices together theoretically (for example, providing a framework for related concepts like collaboration, leadership, interpersonal communication, and user experience) and contextually (for example, foregrounding relationships between several related workplace practices and structures like information management and management philosophies).

- PM is described or discussed primarily in terms of skills (for example, as a necessary skill or as something requiring particular skills) and relationships (for example, how it relates to teams, collaboration, professional communication, communication theory, and education).

PM's relationship to leadership and management

Our findings show PM was often positioned in conversations related to leadership and management, and that these terms were often conflated. For example, in a study by Flammia, Cleary, and Slattery (2010), "team leaders" were responsible for PM activities on distributed teams of students. In their study, students from the University of Central Florida and the University of Limerick were paired on a Web development project with team leaders who are

described as "those individuals who took the initiative to establish communication and to keep teammates on task" (p. 94). Additionally, "team leaders" tended to take responsibility for activities typically assigned to project managers. Walton (2013) examined how trust and credibility influenced development projects, defining the PMs as "project leaders, who envisioned the project from the beginning and spearheaded the early, exploratory research efforts" (p. 90). While reflecting on experiences managing projects with globally distributed teams, Aschwanden (2013) also addressed leadership in terms of shared approaches to managing projects and gives examples of how roles are negotiated by teams. He noted that one way to create familiarity with each other is to create opportunities to for teams to meet face-to-face.

Several authors argue that TPCs are well positioned for leadership roles. For instance, Sturz (2012) discussed the outcome of when TPCs are also information and knowledge-managers, suggesting they are participating in management activities. In integrating these activities,

> Does the technical writer then bear the responsibility for everything in the organization? No, but management of information, knowledge, and communication and certainly even other areas of process management, insofar as they entail dealing with information, should be in the focus of technical writers not just within the documentation department, but also across the company. (Sturz, 2012, n.p.)

The call for leadership is echoed by practitioners and academics alike. For example, Potts (2014) argued TPCs should be in leadership positions on teams. Similarly, Gosset (2012) made an argument suggesting that TPCs have the skills to manage projects "across industries" (n.p).

When discussing leadership and PM, scholarship has also focused on describing roles and responsibilities. The role of leader and the role of project manager may or may not be fulfilled by the same person (Tebeaux & Dragga, 2015; Wolfe, 2010). Wolfe (2010) argued that the PM should not be confused with the leader or boss: "Instead of viewing the project manager as some kind of supervisor, think of the project manager as someone who plays a specific role on the team by keeping the project on course" (p. 13). Tebeaux and Dragga (2015) described

Integrative Literature Review

collaborative projects as having a leader, but the leader may or may not actually be the PM. Further illustrating this dynamic, Vang (2016) explained, "Writers serve not just as resources on project teams but also as leaders within those teams. The lead or sole writer on a project is often responsible for planning and managing relevant tasks within that project" (p. 21). The overlap between managing, leading, and writing often seemed part of how unique workplaces would position writers to manage and lead their own project work.

As with the concept of leadership, management and PM could also be conflated concepts. Nevertheless, PM is also described as a skill appreciated by upper management. Studies of TPC managers conducted in the last decade have cited PM as a desirable skill for TPCs (Amidon & Blythe, 2008; Rainey, Turner, & Dayton, 2005). Baehr (2015) cited PM as a skill TPCs find important and as a role TPCs take on as they move through an organization. As well, Kimball (2015) explained PM as something useful to learn as part of TPC education. Management was also discussed as a changing structure that affects the need for PM. Dicks (2010) argued that changes in management structures and fads are as important for TPCs to pay attention to as well as changes in technology. Flattening team and organization structures require TPCs to be better able to explain value and to work autonomously—thus the need for PM skills. Because communication skills are so central to the success of TPCs, Lewis (2012) argued projects and working with PMs are opportunities to illustrate TPC value.

Finally, it is worth noting some emerging interest in PM, leadership, and gaming. The terms of management, leadership, and PM appeared conflated in this scholarship as well. Two examples, in particular, seemed relevant because of the emphasis on managing communities of people. Robinson (2016) studied World of Warcraft ad-hoc teams in virtual worlds to understand which leadership traits were most valuable, concluding: "Managers of virtual teams might also reconsider the ways in which they assign or talk about leadership; allowing teams to utilize emergent leadership might yield better performance" (p. 188). Meanwhile, McDaniel and Fanfarelli (2015) explored the concept of micro-project management in game design. Their interest was specifically focused on how user experience principles can be used to help manage game development.

PM's relationship to teams and teaming

PM was sometimes discussed in scholarship that focused on managing globally distributed teams. It was also referenced in scholarship that addressed collaboration as an activity and in other work focused on forming team dynamics.

The global marketplace has influenced many workplaces that TPCs encounter, particularly as they work on the development of products and services. As a result, TPC scholarship has been interested in globally distributed and virtual teams for quite a while now. Weimann et al. (2013) report on an extensive case study that took place over two years and focused on 15 different virtual project teams. In their research, they found the importance of building and maintaining trust to ensure there is adequate infrastructure in place to access useful and appropriate information communication technologies and to make sure people benefited from their participation on the team (p. 348). The emphasis on infrastructure, communication, and participation on the team directly concerned PM. Others also argued the importance of building infrastructure for global teams so that they can function effectively (Marghitu & van der Zalm, 2007), the importance of people and ingroup relationships (Burian, 2013; Fox, 2015; Plotnick, Hiltz, & Privman, 2016), effective approaches to communicating in international environments (Wellings, 2009), and the importance of knowledge management for globally distributed teams, especially to guide the use of technology to support communication and information (Ramamurthy, 2009).

Another relationship presented itself in published work that focused on time management, teamwork, collaboration, and team dynamics. For example, Lanier (2009) defined PM skills as those based on collaboration, interpersonal communication, and multitasking. Mogull (2014) reported on a class project where students appeared to define some PM skills as "professional skills" like "teamwork" and "time management" (p. 354). Randazzo (2012) also explained a classroom project where students described PM as related to personal organization, but, over the course of the project, they also learned to define PM as having an "element of stamina" (p. 386). We can surmise Mogull's (2014) and Randazzo's (2012) findings build on Conklin's (2007) work

Benjamin Lauren and Joanna Schreiber

that argued PM skills are increasingly important for TPCs as they worked on cross-functional teams and also locate similar arguments offered by the *Technical Communication Body of Knowledge* (see the entry on Agile, in particular). Spinuzzi's (2015) work also emphasized the importance of having a PM skillset, describing workplace conditions that are networked and made up of contingent teams that share in project management activities.

Additionally, published work has discussed social norms, communication patterns, and communities of practice (Bartell & Brown, 2009; Fisher & Bennion, 2006; Vitas, 2013) and managing team conflict (Rose & Tenenberg, 2015), areas that directly influence how PM is practiced. Other authors discussed managing relationships between silos once a project has been developed (Kumar & Salzer, 2011) and different methods of collaborating on teams (Wolfe, 2010). Lloyd and Simpson (2005) illustrate a case study that explains the role of a PM as managing strands of "activity" (activities constituted prototype development, computer science research, clinical research, and blueprint development). Each of these areas may inform PM practice considerably, even though a feature of the research is it is context-specific.

PM's relationship to specific kinds of workplace projects

We found intersections with documentation management, user experience, localization, and terminology management in the literature.

Hackos' (2007) work provided a foundation for thinking about managing documentation projects, especially the influence of Agile on creating documentation. Additional accounts by both scholars and practitioners offer advice and resources for new documentation managers (Huettner, 2006), although some cover Scrum as a documentation management technique (Friedl & Worth, 2011), authoring platforms and their influence on managing documentation projects (Sabane, 2012), and the importance of planning for the unexpected in documentation projects (Brüggemann & Rehberg, 2014). Mara and Jorgenson (2015) discuss heuristics for managing UX projects. Additionally, Hart-Davidson (2015) discusses the role of UX as essential to the shift of "learning organizations," which has implications for PM through activities like process improvement.

There also appears to be an interest in the role of PM in healthcare contexts. For example, Willerton (2008) illustrated a case about how online content about health is developed. He described project management as a cognitive process essential to the work of the team he studied for the case, noting the importance of timelines and managing individual information development activities. Similarly, Tomlin (2008) examined how the role of medical writers had changed given the availability of online regulations from the federal Food and Drug Administration (FDA). In essence, the article suggested that the position of writers had become more central to development processes. The article concluded by arguing future curriculum should prepare medical writers to develop project documentation and take the lead on PM when applicable.

We also noted a relationship between PM and managing localization and translation projects, including managing terminology. The scholarship in this area appeared to originate in practitioner work. Several articles addressed managing localization and translation projects. Although not explicitly discussing PM as an isolated practice, Zerfaß and Schildhauer (2009) explained the importance of frameworks for information on localization projects, especially around four areas: "the project as a process; communications; tools and technologies used before, during and after translation/localization; and quality assurance" (para. 7). Others have written about running in-house translation departments (Salisbury, 2010), establishing essential tasks for teams to successfully navigate localization projects (Brown-Hoekstra, 2011), discussing the overlap of documentation and translation processes (Brown-Hoekstra, 2010), and, somewhat relatedly, creating healthy translation/localization departments and organizations (Yeng, 2013). Finally, Schmitz (2013) discusses the role TPCs sometimes take on when managing terminology to facilitate knowledge-transfer.

There was also some work that pointed to PM as organizational practice. For instance, Holdaway, Rauch, and Flink (2009) described how information designers can adapt to PM at all levels of organizations, specifically to deliver "excellence" or quality documentation as companies inevitably change management approach and style. Lastly, Condone (2008) explained that traditional forms of PM need to be augmented to manage multimedia projects

Integrative Literature Review

effectively. The article assembled a list of best practices for managing unpredictable multimedia projects, such as "Know your project," "Know your team," and "Know your organizational structure under which you and your team fall" (n.p.). Mochal (2014) described project rescue as a particular project type that often gets overlooked but still needs to be approached systematically like other projects.

PM, teaching, and training

Many of the articles and books in the sample were intended for instructional purposes. We also found several articles about pedagogical approaches related to PM, particularly as they relate to on-the-job reference materials and service learning.

We identified instructional texts that focused on publication management for TPC managers. For example, Schwarzman's (2011) book is specifically written for technical publication managers. Hackos' *Information Management* (2007) provides guidance for documentation and information management projects, and remains a foundational text in this area. Kampf (2012) contributed a chapter in a text on engineering project management that focuses on teaching students to write effective project documentation. Though it is not specific to TPC, the PMBOK offers certification through the Project Management Institute and forwards concepts, such as the project lifecycle, that are meant to be a guide for PMs in most organizational contexts.

Additional texts focused on PM as important for collaboration and teams or using PM methods as pedagogical tools. Campbell (2007) argued the classroom was the place to develop team dynamics and learn to manage team projects. Kampf (2006) advocated for a rhetorical approach to teaching PM to prepare students to work on project teams. Ding and Ding (2008) argue that pedagogy must focus on developing socially responsible, critical reflective practice in teamwork, suggesting that PM methods can be incorporated to help manage these team projects. Lam (2015) builds on Ding and Ding (2008) and Wolfe (2010) by suggesting student teams develop communication charters as a way to help them avoid social loafing during group projects. As well, Smith (2012) devoted much of his PM textbook to teamwork and argued for "a set of heuristics for participating in and managing multidisciplinary teams" (p. 177). Kampf and Longo (2009) described a case study of students working to manage projects in

global contexts, discovering that knowledge management and communication can productively influence project documentation. There was also a focus on learning from real-life case studies (Pflugfelder, 2016) as important for effectively teaching PM skills.

Other pedagogical approaches focused on teaching PM in the context of user experience (UX), an area that overlaps with TPC and has a rich history in the work of scholars like Pat Sullivan, Robert Johnson, and Jan Spyridakis. For example, Getto (2015) developed a set of heuristics for teaching PM in UX. Lund (2011) also offered a focus on managing UX teams, covering topics such as hiring people and evangelizing the team's work. Among other areas of interest, the book advances discussions related to workspaces, explaining, "one of the things I have learned is that the physical environment you create can go a long way in shaping a team identity and climate" (p. 105). It is impossible to summarize all of the important ideas Lund forwards, but much of the advice blurs the line between management and PM (Lund recommends establishing communication plans for teams, which is traditionally a PM activity).

Ethics and rhetoric are noted as related to PM in multiple pedagogical articles. In these texts, rhetoric should be understood as audience-focused strategies for effectively and ethically communicating. For example, Hamilton (2009) offered a discussion on the ethics of managers motivating teams, noting several de-motivators in the process: "not listening," "being inflexible," "imposing arbitrary schedules," "taking away power," "withholding information," "disrespecting people," "not leading," "personnel craziness," and "market realities" (pp. 59-60). Textbooks (such as Rude and Eaton, 2011) build on the concepts in rhetoric that are widely taught in TPC college courses, such as audience and purpose. Rude and Eaton (2011) specifically lean on rhetoric to introduce PM as an important TPC skill in later chapters of their book.

PM methods have also been utilized as pedagogical tools. Rebecca Pope-Ruark's (2014, 2015) work focuses on using Agile methods to teach professional writing and learn more complex rhetorical concepts. In these texts, rhetoric is used to help teach TPCs how to be more effective communicators. Agile has also been used to teach other skills, such as managing internships (Vakaloudis and Anagnostopoulos, 2015). Another example is offered by Beale (2016), who advocates teaching Agile methods using board games.

Benjamin Lauren and Joanna Schreiber

Research Question 1: How Is PM Described as a Practice?

How PM is described as a practice is addressed in two ways. The first and most prevalent way is to describe PM in terms of the skills and tasks required in the activity or PM as a needed skill in the workplace or as part of a necessary TPC skillset. The second is to describe how external or physical forces (documentation, technology, workplace design) appeared to influence or define PM practice in TPC.

PM in terms of skills or tasks

PM is described in the literature in terms of required soft skills for PM activity (Lanier, 2009; Michaels, 2005), organizational skills (Kimball & Hawkins, 2007; Lannon, 2008; Markel, 2015; Wolfe, 2010), and as a skill needed by TPCs (Carliner, 2012). Soft skills cited are collaboration, interpersonal communication, flexibility, multitasking, and communication skills (Green & DiGiammarino, 2014; Lanier, 2009; Michaels, 2005; O'Connor, 2006). Markel (2015) described PM as breaking down a project into "manageable chunks" and Lannon (2008) described PM as organizational strategies for keeping projects on track (goal setting, timetables, and setting meetings). Wolfe (2010) highlighted the PM's role in task analysis and meeting minutes. Hackos (2007) specifically discussed implementing a new CMS and explained the PM's role as keeping projects and tasks moving while other larger projects are being implemented.

Our sample also indicated it is important for PM practice to utilize the roles of peers effectively and to understand the value of their roles and associated knowledge. Lebson (2012) explained, "The project management triangle has three constraints: time, cost, and scope. It is important for the project manager and those on the project to understand how usability relates to these three constraints" (p. 13). Ames and Riley (2013) argued that it is very important that PMs and information architects understand the strengths the other brings to the table, because the success of the projects is reliant on these two roles utilizing each other's skills effectively. Similarly, Berggreen and Kampf (2015) explored how technical documentation for projects can be developed through social and interpersonal interactions.

Interestingly, Green and DiGiammarino (2014) argue that the interpersonal skills necessary for PMs

(the ability to negotiate and resolve conflict) are separate from the skills required for TPC work. This aligns with Herman's (2013) contention that TPCs are in great positions to be PMs, but they need more than communication skills to successfully budget and scope projects as well as identify risks: "Project management is about leadership, team building, motivation, communication, negotiation, conflict management, political and cultural awareness, trust building, coaching, and decision making" (p. 7). One way to approach these skills is through modeling. Dyer (2012) argued that information architects (IA) benefit from modeling: "Models help IAs capture the benefit of a scientific process while leaving room for the art that happens when you innovate on the user's behalf" (p. 19). Hackos (2012) also advocated the importance of mutual understanding between IAs and PMs as well as those roles' understanding of writers' work and value. Finally, Harris (2014) argued for developing skill maps in the workplace; he identified leadership and project management as two categories of skills/capabilities, with PM at their intersection. The skillset of the PM in this configuration seemed to focus on facilitation.

Discussions about the skills or tasks of PM also extended from producing documentation to highlighting rhetorical practices. PM has been described exclusively in terms of documentation or managing documents (see Rude & Eaton, 2011). As noted several times in the literature, PM has also been cited as a needed skill for TPCs, but some argue it is still not getting enough attention. For example, Henning and Bemer (2016) argued the Occupational Outlook Handbook entry for technical writing should be updated to include several skills, including PM. Importantly, PM skills have been explicitly tied to rhetoric. Berggreen and Kampf (2016) explored relationships between technical communication and stage-gate project management processes, concluding, "Project Management, and particularly the Stage Gate processes involved in project conception represent an area that is suited to the same types of rhetorical analysis used in designing communication" (n.p.). While the concept of rhetoric seemed most often aligned with work published in academic venues, it is still notable that rhetoric was the communication theory most often paired with PM.

Integrative Literature Review

PM and workplace contexts

Published work also discussed the environmental or physical factors affecting project management, such as TPC documentation (Walton et al., 2016), technology (Carliner, Qayyum, & Sanchez-Lozano, 2014; Dicks, 2010), and the design of the workplace (Lauren, 2015). Rather than focus on projects involving developing documentation, Walton et al. (2016) went a step further to highlight documentation as defining projects. Dicks (2010) argued that changes in technology alongside changes in management and organizational practices (for example, flattening structures) changed the way TPCs do their work—content oriented, single-sourcing—and thus influence PM practices and make them more important for TPCs. Carliner (2012) also argued that TPC work is influenced by business models, and the technologies used to facilitate PM are also an important factor. As such, TPCs need to understand how work can be tracked by PM systems, because these systems can be used to define value and productivity (Carliner, Qayyum, & Sanchez-Lozano, 2014).

Research Question 2: What Communication Theory Is Studied in the Context of PM?

Our findings indicate that PM is most often discussed through rhetorical frameworks used to evaluate and shape project communication. For example, Brizee (2008) writes about stasis theory, a rhetorical strategy, to help address the changing dynamics between subject matter experts and technical communicators in the workplace and the changing nature of collaboration practices. He argued, "We need to emphasize for our students and for our work teams the importance and value of using rhetoric for productive ends" (Brizee, 2008, p. 376). Others have discussed the importance of a strategic framework for managing change. For example, Bialek (2008) noted the importance of a communication plan for managing corporate culture change. She explained, "According to Marks and Mirvis, the following aspects are necessary to manage the merger syndrome: Insight, Information, Involvement and Inspiration. Communication is an essential part of all of those" (n.p.). Such communication frameworks seem an essential part of PM practice. Suchan (2006) also offered a change management plan that focused on designing effective communication by emphasizing the importance of dialogue.

In addition to rhetorical theory, intercultural communication has been discussed in the context of

PM. For example, Ray, Reilly, and Tirrell (2015) argued the importance of intercultural communication in managing a distributed international grant project. Their work demonstrates the challenges of communicating and collaborating across distributed teams. Additionally, Happ (2014) discussed the importance of adjusting management and communication strategies when collaborating with people from different cultural backgrounds. To do so, she grounds her discussion in Chinese contexts and draws from existing cultural identity heuristics to guide the ideas. Corroborating this approach, Voss and Flammia (2007) advocated for a rhetorical approach to intercultural communication for teamwork, arguing, "Effective teamwork across multi-national business units adds an important new tool to the technical communicator's skill set—intercultural sensitivity and rhetorical awareness (both verbal and nonverbal)" (p. 77). Certainly, the emphasis on ethical intercultural communication extends to the PMs leading these teams.

Research Question 3: What PM Methods Are Being Discussed?

In comparison to communication theories, implementation strategies were discussed less often in the sample. Of the existing strategies, Agile was discussed most frequently. This is not surprising. As Dicks (2013) stated: "Practitioners now refer to any method that seeks to abandon the waterfall method and use more streamlines processes as 'agile,' whether they happen to align with the 'official' agile methods espoused by the Agile Alliance or not" (p. 135). Though Agile or SCRUM (an Agile tool) are discussed as examples of preferred PM methods in the literature (Baca, 2014), some have argued that they require some getting used to (Sigman, 2007). Others have discussed Agile environments as opportunities for TPCs to expand their roles (Austin, 2014) or become embedded in teams (Smith & Gale, 2014). Collins (2014) recommended aligning existing documentation approaches with Agile methodologies. Moving beyond aligning existing approaches, Baker (2014) advocated for creating Agile TPC processes because it aligned with user content needs, explaining that Agile "requires us to create content as small, highly cohesive units that are loosely coupled. Happily, that is exactly the sort of content that works best for the new ways people seek and use content" (p. 27). Agile has also been promoted

as a preferred method for conducting TPC practices relating to editing (Rude & Eaton, 2011).

As workflows shift and production cycles shorten, PM methods have moved away from the traditional step-by-step waterfall approach and toward more flexible, iterative strategies. Kimball and Hawkins (2008) offer iterative and mixed methods in addition to waterfall. Arguing that the traditional waterfall method can be "inefficient," Dicks (2010, 2013) covered user-centered design (UCD), Agile, iterative, extreme programming PM methods. He also discussed SCRUM as a separate PM method from Agile. Both the *Technical Communication Body of Knowledge* (TC-BOK) and the PMBOK discuss Agile as influencing PM. The TC-BOK specifically addressed Agile as it influences the work of TPCs.

Discussion

Across the publication venues we reviewed, PM was generally positioned as a significant and important practice to TPC that requires training and education. Our literature review also showed that many of the accounts of PM in TPC seek to describe it as a prescriptive skillset that must be learned rather than as a workplace practice that requires critical attention and reflection. While we can point to examples in TPC that approach PM in organizations from a critical mindset (Hart-Davidson, 2015), as well as teaching cases that emphasize reflection through practice (Randazzo, 2016), this work seemed to be an exception. While we do not want to dismiss the importance of work that describes PM skills, we also believe that a better balance could be struck that asks deeper questions about how TPC can add to conversations about PM as a practice in meaningful ways. Below we make suggestions for several potential areas that research and practice might address:

Study and Practice of Implementation Methods

We see a strong opportunity for understanding how implementation methods like Agile, Scrum, and Lean influence the ways in which teams communicate and work with each other to manage projects and connect with customers. How do these methods shape what TPCs produce? How do they shape teams? Many teams trying out emerging implementation strategies are flatter in terms of hierarchy, and so, it follows that the communication strategies, practices, and philosophies being used may be responding to, rather than shaping,

these new ways of working. Future research in this area might also examine how issues of power function on these flatter teams and how these circumstances influence the ways in which projects are managed and by whom.

We also think it would be useful to further investigate how inclusive implementation strategies are in practice. In TPC there are applications of implementation methods used to support teaching and learning (Pope-Ruark, 2012), but we might also stop to ask if these strategies are actually inclusive and equitable in practice. And, as we adapt TPC work to implementation methods like Agile (as described in the TC-BOK), we might ask if these methods of managing people and projects are producing ethical outcomes. Could TPCs be involved with making implementation strategies more ethical and inclusive? How do we support and instruct TPCs to anticipate rather than react to and adopt changing PM practices?

Conflation of Terminology

A second area we believe would be useful is a deeper analysis and understanding of the conflation of terminology we discovered. That is, PM, leadership, and management were often used interchangeably. We do not want to suggest that blurring terms is essentially an unproductive approach, but these ideas do presently serve very different functions in a variety of organizations. Research that aims at this issue might begin by asking about the roles of leadership, management, and PM—what distinguishes these ideas from each other and where are they purposefully being blurred for practical reasons? How do the terms being used to describe PM influence how people do the job? We think empirical research and reflective practice in this area, as well as a historical perspective in this area, would be productive.

Content Strategy and PM

One surprising finding was that little scholarship on Content Strategy (CS) directly addressed PM in our sample. In recent years, CS has appeared to replace discussions of publication management in TPC work. As Andersen and Batova (2016) explained, "Component content management—an interdisciplinary area of practice that focuses on creating and managing information as small components rather than documents—has brought significant changes to professional and technical communication work since 2008" (p. 2). The move away from developing

documents toward managing content can be understood as embracing a model for TPC that focuses on integration. Andersen (2014) explained the shift as "integration of organizational and user generated content, disciplines and departments, expertise and roles, and business processes and tools" (p. 10). Such integration requires skills in PM, "but, as is too often the case, most technical communicators have not been trained to think like managers, business analysts, or content engineers" (p. 13).

In our view, CS is an important area of study that has already garnered a great deal of attention across academic and industry publication venues, but our research suggests its relationship to PM requires further analysis and understanding. For example, we might ask questions like, Is CS a kind of PM? What is the value of explicitly acknowledging the relationship between CS and PM? Have these two areas matured as separate but related practices? If so, how do they work or fit together? It seems there are implications from such questions that could affect the teaching, practice, and research of both PM and CS.

Teaching and Learning PM

Since TPC is very interested in educating students with a PM skillset, we believe further understanding of what comprises that skillset in today's fast-paced, global workplaces, economies, and networks would be useful. Our literature review pointed out accounts of PM, for example, in health care, game development, and in cross-functional development teams. So, how do the variety of contexts where PM is practiced in TPC influence classroom curriculum, training materials, and, relatedly, the TC-BOK? Future instructional cases could look to assemble rhetorical frameworks for thinking about PM as more than planning, scoping, budgeting, and time-keeping. While we concede PM is made up of technical activities at times, it is also a social activity that requires audience-focused communication skills. Future instructional work might more specifically examine how we can prepare PMs to respond to the dynamics of their organizations, teams, and individuals.

Limitations

As with any study, our literature review has important limitations. The first limitation is the scope of the project. We did not include publications such as blogs, podcasts, or slide decks in our review. For the purposes of this research, we decided to focus on texts that had been published about or with inferred relationships to PM by venues that are widely recognized by the field. Although we do believe an expanded version of our literature review might consider such publication outlets, that was not the stated purpose of our article. As well, we chose not to pursue questions only about information communication technologies (ICTs) and their relationship to PM. Although there is some discussion of ICTs in areas of the review, the research produced on the role ICTs in PM we found useful as embedded into each section of our findings rather than as a separate section. It is possible, in hindsight, that a clearer relationship between CS and PM might have been established had we focused more on these relationships.

Other recent integrative literature reviews (see Andersen & Batova, 2015) explicitly studied the relationship between practitioner publication and scholarly publication approaches to their topic. We included both types of publications, but making direct comparisons was also not a stated goal of our research. Rather, we aimed to bring academic and practitioner publications into conversation without identifying the background of the text's authors. As a result, we recognize additional practitioner publications and blogs as well as relevant scholarship from other fields (for example, management studies, sociology, and engineering) would enrich our findings, but we also argue these publications were beyond the scope of this particular project. Another literature review on PM might work to more deliberately assemble data from publication venues listed in the TC-BOK or from outlets such as Nielsen Norman Group or A List Apart.

Finally, while we worked to be exhaustive in this research, our scope created several other research design limitations. For example, at times by containing the scope of the project, we were forced to discover workarounds for the methods used by different databases to catalog publications (for example, the differences in the way one outlet uses keywords and metadata in comparison to another). We addressed these issues in dialogue with each other and responded to such issues as they surfaced—always in the spirit of assembling the most complete sample we could, given our study parameters. This approach led to us making judgment calls regarding published work we knew existed but could not include, because it was not

Benjamin Lauren and Joanna Schreiber

published in one of the journals we identified or not within the years we specifically outlined for our sample. For example, Rebecca Pope-Ruark's (2012) article "We Scrum Every Day: Using Scrum Project Management Framework for Group Projects" was published in *College Teaching*. To respond to such issues, we worked to include some sources in the introduction, literature review, and discussion sections to make sure they surfaced in our conversation in a meaningful way.

Conclusion: Toward a Rhetorical Approach to Developing PM Best Practices

Our integrative literature review shows that the literature from both academic and practitioner outlets discusses PM as primarily an adjacent practice to teamwork and collaboration or as requiring skills like leadership. At the same time, the literature demonstrated how often TPC published work collapses important areas like management and PM, even though these areas are rapidly changing alongside organizational structures and working practices. Thinking of PM not as simply relating to all of these things but actually situating them is important moving forward for TPC to develop flexible and sustainable best practices.

We believe a productive way to critically engage the complexity of PM is to rhetorically situate practices contextually (Andersen, 2014; Porter, 2010; Salvo, 2004). While TPC seems to be approaching the teaching of PM rhetorically, we also need to explicitly theorize the practices of PM rhetorically in the organizations where we work. By rhetorically situating, we mean that rhetoric theory offers TPCs the tools to critically analyze and align relationships among tools, processes, and stakeholders at individual, project, and organizational levels. We believe the outcome of this approach would necessarily position TPCs to develop and shape ethical and audience-focused PM practices through our communication expertise. It also positions TPCs to explain the complexity of PM and the importance of rhetorical communication as central to effective work processes. This change in how we approach PM has clear implications for how we approach instruction and preparation, workplace studies, and best practices of managing people, texts, and projects. Furthermore, grounding PM with a rhetorical approach to communicating also helps TPCs think through the strengths and weaknesses of existing

models in productive ways. PM has a direct influence on the frequency and type of communication practices; team dynamics; leadership philosophies; distributed workflows; collaboration activities; and organizational structures, cultures, and philosophies. A rhetorical approach can help make relationships between these activities and agents visible, and demonstrate how associated coordinative communicative dynamics influence the work of project teams. Indeed, this is a natural role for us as TPCs, because advocating for the people around us has always been a foundational mindset of our field.

References

Agile Development. (n.d.) In Technical Communication Body of Knowledge. Retrieved from https://www.tcbok.org/wiki/agile-development/

Allen, J. (1990). The case against defining technical writing. *Journal of Business and Technical Communication*, *4*, 68–77.

Ames, A., & Riley, A. Play to your strengths, shore up your weaknesses: The dynamic duo of project manager and strategic information architect. *Intercom*, *60*(8), 25–27.

Amidon, S., & Blythe, S. (2008). Wrestling with Proteus: Tales of communication managers in a changing economy. *Journal of Business and Technical Communication*, *22*, 5–37. doi:10.1177/1050651907307698

Anawati, D., & Craig, A. (2006). Behavioral adaptation within cross-cultural virtual teams. *IEEE Transactions on Professional Communication*, *49*, 44–56.

Andersen, R. (2014). Toward a more integrated view of technical communication. *Communication Design Quarterly*, *2*(2), 10–16.

Andersen, R., & Batova, T. (2015). The current state of component content management: An integrative literature review. *IEEE Transactions on Professional Communication*, *58*, 247–270. doi:10.1109/TPC.2016.2516619

Aschwanden, B. (2013, June). Delivering successful projects with global teams. TC World. Retrieved from http://www.tcworld.info/e-magazine/international-management/article/delivering-successful-projects-with-global-teams/

Integrative Literature Review

Austin, G. (2014). Agile, an awesome alternative. *Intercom*, *62*(10), 14–15.

Baca, S. (2014). The power of technical communication skills in scrum. *Intercom*, *62*(10), 22–24.

Baehr, C. (2015). Complexities in hybridization: Professional identities and relationships in technical communication. *Technical Communication*, *62*(2), 104–117.

Baker, M. (2014). Toward an agile tech comm. *Intercom*, *62*(10), 25–28.

Bartell, A. L., & Brown, K. A. (2009). Secrets to managing a large documentation project virtually-process, technology, and group ethos: Lessons learned. Paper presented at the International Professional Communication Conference. 1–6. doi:10.1109/IPCC.2009.5208723

Batova, T., & Andersen, R. (2016). Introduction to the special Issue: Content strategy—a unifying vision. *IEEE Transactions on Professional Communication*, *59*, 2–6.

Beale, M. (2016). Designing an agile game for technical communication classrooms. Paper published in the Proceedings of the 34th ACM International Conference on the Design of Communication, 1-9. doi:10.1145/2987592.2987615

Berggreen, L., & Kampf, C. E. (2015). Project management communication 2.0—the socio-technical design of PM for professional communicators. Paper presented at the International IEEE Professional Communication Conference. doi: 10.1109/IPCC.2015.7235842

Berggreen, L., & Kampf, C. (2016). Stage-gate project management processes as professional communication practice: Connecting technical and marketing communication in new product development. Paper presented at the International IEEE Professional Communication Conference. 1-7. doi:10.1109/IPCC.2016.7740521

Bialek, C. (2008, June). Managing culture change within the context of mergers and acquisitions. TC World. Retrieved from http://www.tcworld.info/e-magazine/international-management/browse/3/article/managing-culture-change-within-the-context-of-mergers-and-acquisitions/

Brady, M. A., & Schreiber, J. (2013). Static to dynamic: Professional identity as inventory, invention, and performance in classrooms and workplaces. *Technical Communication Quarterly*, *22*, 343–362.

Brown-Hoekstra, K. (2010, December). How documentation and translation processes affect each other. TC World. Retrieved from http://www.tcworld.info/e-magazine/content-strategies/article/how-documentation-and-translation-processes-affect-each-other/

Brown-Hoekstra, K. (2011, December). Integrating localization and technical communication: 10 critical tasks. TC World. Retrieved from http://www.tcworld.info/e-magazine/translation-and-localization/article/integrating-localization-and-technical-communication-10-critical-tasks/

Brüggemann, M., & Rehberg, D. (2014, July). Keep the wheels of work turning. TC World. Retrieved from http://www.tcworld.info/e-magazine/technical-communication/article/keep-the-wheels-of-work-turning/feed/

Brumberger, E., & Lauer, C. (2015). The evolution of technical communication: An analysis of industry job postings. *Technical Communication*, *62*, 224–243.

Brizee, H. A. (2008). Stasis theory as a strategy for workplace teaming and decision making. *Journal of Technical Writing and Communication, 38*, 363–385. doi:10.2190/TW.38.4.d

Burian, A. (2013, February). Managing projects effectively in India. TC World. Retrieved from http://www.tcworld.info/e-magazine/international-management/article/managing-projects-effectively-in-india/e-magazine/

Campbell, A. (2007). Managing team projects. *Intercom*, *54*(8), 36–37.

Carliner, S. (2004). What do we manage?: A survey of the management portfolios of large technical communication groups. *Technical Communication*, *51*, 45–67.

Carliner, S. (2012). Using business models to describe technical communication groups. *Technical Communication*, *59*, 124–147.

Carliner, S., Qayyum, A., & Sanchez-Lozano, J. C. (2014). What measures of productivity and effectiveness do technical communication managers track and report? *Technical Communication, 61*, 147–172.

Charmaz, K. (2006). *Constructing grounded theory* (1st ed.). Thousand Oaks, CA: Sage.

Clark, D. (2016). Content strategy: An integrative literature review. *IEEE Transactions on Professional*

Communication, *59*, 7–23. doi:10.1109/ TPC.2016.2537080

Collins, J. (2014). Tech docs as agile deliverables. *Intercom*, *62*(10), 10–13.

Codone, S. (2008). The role of the multimedia project manager in a changing online world. The role of the multimedia project manager in a changing online world, 1-5. doi:10.1109/IPCC.2008.4610197

Conklin, J. (2007). From the structure of text to the dynamic of teams: The changing nature of technical communication practice. *Technical Communication*, *54*, 210–231.

Dicks, R. S. (2013). How can technical communicators manage projects? In J. Johnson-Eilola, and S. A. Selber (Eds.), *Solving Problems in Technical Communication* (pp. 310–332) [Kindle version]. Retrieved from Amazon.com

Dicks, S. (2010). The effects of digital literacy on the nature of technical communication work. In R. Spilka (Ed.), *Digital Literacy for Technical Communication: 21st Century Theory and Practice* (pp. 51-81). Mahwah, NJ: Lawrence Erlbaum Associates.

Dicks, S. (2004). *Management principles and practices for technical communicators*. New York, NY: Longman.

Ding, H., & Ding, X. (2008). Project management, critical praxis, and process-oriented approach to teamwork. *Business Communication Quarterly*, *71*, 456–471. doi:10.1177/1080569908325861

Dubinsky, J. (2015). Products and processes: Transition from "Product Documentation to… Integrated Technical Content." *Technical Communication*, *62*, 118–134.

Dyer, L. (2012). Information architecture and business process management: A recipe for new business value. *Intercom*, *59*, 16–19.

Fisher, L., & Bennion, L. (2005). Organizational implications of the future development of technical communication: Fostering communities of practice in the workplace. *Technical Communication*, *52*, 277–288.

Flammia, M., Cleary, Y., & Slattery, D. M. (2010). Leadership roles, socioemotional communication strategies, and technology use of Irish and US students in virtual teams. *IEEE Transactions on Professional Communication*, *53*, 89–101.

Fox, A. (2015, April). Building and managing a successful distributed team. TC World. Retrieved from http://www.tcworld.info/e-magazine/ international-management/article/building-and-managing-a-successful-distributed-team/

Friedl, M., & Worth, C. (2011, July). Project management with scrum. TC World. Retrieved from http://www.tcworld.info/e-magazine/ international-management/browse/1/article/ project-management-with-scrum/

Gallivan, M. J. (2001). Meaning to change: How diverse stakeholders interpret organizational communication about change initiatives. *IEEE Transactions on Professional Communication*, *44*, 243–266. doi:10.1109/47.968107

Getto, G. (2015). Managing experiences: Utilizing user experience design (UX) as an agile methodology for teaching project management. *International Journal of Sociotechnology and Knowledge Development*, *7*(4), 1–14.

Giammona, B. (2004). The future of technical communication: How innovation, technology, information management, and other forces are shaping the future of the profession. *Technical Communication*, *51*, 349–366.

Goldratt, E. M., & Cox, J. (2014). *The goal: A process of ongoing improvement* (3rd rev., 20th anniversary ed.). Great Barrington, MA: North River Press.

Gossett, K. (2012). Technical communication and project management. Paper presented at the 30th ACM International Conference on Design of Communication (pp. 371–372). New York, NY: ACM Digital Library. doi: http://dx.doi.org/10.1145/2379057.2379132

Green, H. M. and DiGiammarino, R. (2014). Project rescue: A mindset for collaboration. *Intercom*, *61*(9), 6–9.

Gonzales, L. (2015). Multimodality, translingualism, and rhetorical genre studies. In *Composition Forum*, *31*. Association of Teachers of Advanced Composition.

Hackos, J.T. (2007). *Information development: Managing your documentation projects, portfolio, and people*. Indianapolis, IN: Wiley.

Hackos, J. T. (2007). Implementing a content management system. *Intercom*, *54*, 14–17.

Hackos, J. T. (2012). Influencing the bottom line: Using information architecture to effect business success. *Intercom*, *59*(1), 10–13.

Hackos, J.T. (2016). International standards for information development and content

Integrative Literature Review

management. *IEEE Transactions on Professional Communication, 59*, 24–36. doi:10.1109/TPC.2016.2527278

Hamilton, R. (2009). *Managing writers: A real world guide to managing technical documentation*. Laguna Hills, CA: XML Press.

Happ, N. (2014, December). The Asian challenge: Don't lose face. TC World. Retrieved from http://www.tcworld.info/e-magazine/business-culture/article/the-asian-challenge-dont-lose-face/

Harris, B. (2014). Technical authoring skills mat at Red Gate Software. *Intercom, 61*(3), 6–10.

Hart-Davidson, W., Bernhardt, G., McLeod, M., Rife, M., & Grabill, J. T. (2007). Coming to content management: Inventing infrastructure for organizational knowledge work. *Technical Communication Quarterly, 17*, 10–34. doi:10.1080/10572250701588608

Hart-Davidson, W. (2015). The turn to learning: A view of UX project management as organizational learning practice. *International Journal of Sociotechnology and Knowledge Development, 7*(3), 49–52.

Hart, H., & Conklin, J. (2006). Toward a meaningful model of technical communication. *Technical Communication, 53*(4), 395–415.

Hartelius, E. J., & Browning, L. D. (2008). The application of rhetorical theory in managerial research: A literature review. *Management Communication Quarterly, 22*(1), 13–39. doi:10.1177/0893318908318513

Hartwick, J., & Barki, H. (2001). Communication as a dimension of user participation. *IEEE Transactions on Professional Communication, 44*, 21–36. doi:10.1109/47.911130

Henning, T., & Bemer, A. (2016). Reconsidering power and legitimacy in technical communication: A case for enlarging the definition of technical communicator. *Journal of Technical Writing and Communication, 46*(3), 311-341, doi:10.1177/0047281616639484

Herman, L. (2013). Project manager and the technical communicator: Why it works. *Intercom, 60*(8), 6–8.

Holdaway, J., Rauch, M., & Flink, L. (2009). Excellent adaptations: Managing projects through changing technologies, teams, and clients. Paper presented at the International IEEE Professional Communication Conference, 1-27. doi:10.1109/IPCC.2009.5208710

Hornik, S., Chen, H., Klein, G., & Jiang, J. J. (2003). Communication skills of IS providers: An expectation gap analysis from three stakeholder perspectives. *IEEE Transactions on Professional Communication, 46*, 17–34. doi:10.1109/TPC.2002.808351

Huettner, B. (2006). Documentation project management resources. *Intercom*, (53) 18–20, 31.

Jain, J., & Courage, C. (2013). Global design teams: Managing distributed teams effectively. *User Experience Magazine, 13*(1). Retrieved from http://uxpamagazine.org/global-design-teams/

Jansen, C. (2016, May). Management skills for technical writers. TC World. Retrieved from http://www.tcworld.info/rss/article/management-skills-for-technical-writers/

Johnson, R. R. (1997). Audience involved: Toward a participatory model of writing. *Computers and Composition, 14*, 361–376.

Johnson-Eilola, J. (2005). *Datacloud: Toward a new theory of online work*. New York, NY: Hampton Press.

Kampf, C.E. (2006). The future of project management in technical communication: Incorporating a communications approach. Paper presented at International Professional Communication Conference. New York, NY: IEEE Xplore. doiI: http://dx.doi.org/10.1109/IPCC.2006.320372

Kampf, C. E., & Longo, B. (2009). What is excellence for project management knowledge in the context of globalization? Paper presented at International Professional Communication Conference,1-10. doi:10.1109/IPCC.2009.5208707

Kampf, C. E. (2012). Skills and strategies for effective project documentation. In K. Smith and P. Imbrie (Eds.), *Teamwork and project management* (pp. 226–236). New York, NY: McGraw-Hill.

Kelly, W. (2003). The hidden relationship between project managers and technical writers. Retrieved from Tech Republic: http://www.techrepublic.com/article/the-hidden-relationship-between-project-managers-and-technical-writers/

Kent-Drury, R. (2000). Bridging boundaries, negotiating differences: The nature of leadership in cross-functional proposal-writing groups. *Technical Communication, 47*, 90–98.

Khoury, S. (2013). Taking Your Seat at the Strategy Table: Three Must-Have Leadership

Benjamin Lauren and Joanna Schreiber

Skills. *User Experience Magazine*, *13*(1). Retrieved from http://uxpamagazine.org/taking-your-seat-at-the-strategy-table/

Killingsworth, M. J., & Jones, B. G. (1989). Division of labor or integrated teams: A crux in the management of technical communication? *Technical Communication, 36*, 210–221.

Kimball, M. (2015). Training and education: Technical communication managers speak out. *Technical Communication*, *62*, 135–145.

Kimball, M., & Hawkins, A. (2007). *Document design: A guide for technical communicators*. New York, NY: Bedford-St. Martin's Press.

Kumar, P., & Salazar, O. (2011, June). Managing expectations across a project lifecycle. TC World. Retrieved from http://www.tcworld.info/e-magazine/content-strategies/article/managing-expectations-across-a-project-lifecycle/

Lam, C. (2015). The role of communication and cohesion in reducing social loafing in group projects. *Business and Professional Communication Quarterly, 78*, 454–475. doi:10.1177/2329490615596417

Lammers, M., & Tsvetkov, N. (2008, October). More with less: the 80/20 rule of PM. TC World. Retrieved from http://www.tcworld.info/e-magazine/content-strategies/article/more-with-less-the-8020-rule-of-pm/e-magazine/translation-and-localization/

Lanier, C. (2009). Analysis of the skills called for by technical communication employers in recruitment postings. *Technical Communication*, *50*, 51–61.

Lannon, J. (2008). *Technical Communication* (11th ed.). New York, NY: Longman.

Lauren, B. (2015). Mapping the workspace of a globally distributed "agile" team. *International Journal of Sociotechnology and Knowledge Development*, *7*(2), 45–62.

Lebson, C. (2012). Making usability a priority: Advocating the value of user research. *Intercom, 59*(9), 10–13.

Lewis, C. (2012). Leading from the "write." *Intercom*, *59*(2), 19–21.

Lloyd, S., & Simpson, A. (2005). Project management in multi-disciplinary collaborative research. *Proceedings of IEEE International Professional Communications Conference*, Limerick, Ireland, July 10 to July 13, 2005, IEEE, pp. 602–611.

Longo, B. (2000). *Spurious coin: A history of science, management, and technical writing*. Albany, NY: State University of New York Press.

Lund, A. (2011). *User experience management: Essential skills for leading effective UX teams*. Burlington, MA: Morgan Kaufmann.

Markel, M. *Technical Communication* (11th ed.). Boston, MA: Bedford/St. Martin's.

Mara, A., & Jorgenson, J. (2015). Mutt methods, minimalism, and guiding heuristics for UX project management. *International Journal of Sociotechnology and Knowledge Development*, *7*(3), 38–48.

Marchwinski, T., & Mandziuk, K. (2000). The technical communicator's role in initiating cross-functional teams. *Technical Communication, 47*, 67–76.

Marghitu, D., & van der Zalm, R. (2007). Creating a global team and a global infrastructure. *User Experience Magazine*, *6*(1). Retrieved from http://uxpamagazine.org/global_team_global_infrastructure/

McCarthy, J. E., Grabill, J. T., Hart-Davidson, W., & McLeod, M. (2011). Content management in the workplace: Community, context, and a new way to organize writing. *Journal of Business and Technical Communication, 25*(4), 367- 395.

McDaniel, R., & Fanfarelli, J. (2015). Rhythm and cues: Project management tactics for UX in game design. *International Journal of Sociotechnology and Knowledge Development*, *7*(3), 20–37.

Michaels, S.J. (2005). Best practices for contractor management. *Intercom*, (52), 22–24.

Miller, C. R. (1998). Learning from history: World War II and the culture of high technology. *Journal of Business and Technical Communication*, *12*, 288–315.

Miller, C. R. (1989). What's practical about technical writing. In B.E. Fearing & W.K. Sparrow (Eds.), *Technical writing: Theory and practice*, (pp. 61–70). New York, NY: Modern Language Association of America.

Mochal, T. (2014). Minimize the risk associated with project rescue. *Intercom*, *61*(9), 10–12.

Mogull, S. A. (2014). Integrating online informative videos into technical communication service courses. *IEEE Transactions on Professional Communication, 57*, 340–363. doi:10.1109/TPC.2014.2373931

Integrative Literature Review

Morris, P.G. (2011). A brief history of project management. In P. Morris, J. Pinto, and J Söderlund (Eds), *The Oxford Handbook of Project Management* (pp. 15–36). New York, NY: Oxford University Press.

Moses, J. (2015). Agile writing: A project management approach to learning. *International Journal of Sociotechnology and Knowledge Development*, *7*(2), 1–13.

O'Connor, V. (2006). Designing and planning modular content projects. *Intercom*, (53), 20–22.

Pflugfelder, E. H. (2016). Failure matters: Conflicting practices in a high-tech case. *Journal of Technical Writing and Communication.* Advance online publication. doi:10.1177/0047281616662984

Pigg, S. (2014). Coordinating constant invention: Social media's role in distributed work. *Technical Communication Quarterly, 23*, 69–87. doi:10.1080/10572252.2013.796545

Pope-Ruark, R. (2012). We scrum every day: Using scrum project management framework for group projects. *College Teaching, 60*(4), 164–169. doi:10.1080/87567555.2012.669425

Pope-Ruark, R. (2014). A case for metic intelligence in technical and professional communication programs. *Technical Communication Quarterly, 23*, 323–340. doi: 10.1080/10572252.2014.942469

Porter, J. E. (2010). Rhetoric in (as) a digital economy. In S. Selber (Ed.) *Rhetorics and technologies: New directions in writing and communication*. Columbia, SC: University of South Carolina Press.

Pope-Ruark, R. (2015). Introducing agile project management strategies in technical and professional communication courses. *Journal of Business and Technical Communication, 29*, 112–133. doi:10.1177/1050651914548456

Potts, L. (2014). *Social media in disaster response: How experience architects can build for participation*. New York, NY: Routledge.

Rainey, K. T., Turner, R. K., & Dayton, D. (2005). Do curricula correspond to managerial expectations? Core competencies for technical communicators. *Technical Communication, 52*, 323–352.

Rainie, L., & Wellman, B. (2014). *Networked: The new social operating system*. Cambridge, MA: MIT Press.

Ramamurthy, R. (2009, February). Sharing knowledge across borders. TC World. Retrieved from http://www.tcworld.info/e-magazine/international-management/article/sharing-knowledge-across-borders/trackback/

Randazzo, C. (2012). Positioning résumés and cover letters as reflective-reflexive process. *Business Communication Quarterly, 75*, 377–391. doi:10.1177/1080569912459267

Ray, A., Reilly, C., & Tirrell, J. (2015). A study of a federally funded project between higher-ed institutions in the U.S. and Pakistan: An intercultural academic project management. *International Journal of Sociotechnology and Knowledge Development*, *7*(2), 27–43.

Reinsch, N. L., & Gardner, J. A. (2014; 2013). Do communication abilities affect promotion decisions? Some data from the C-suite. *Journal of Business and Technical Communication*, *28*, 31–57. doi:10.1177/1050651913502357

Rice-Bailey, T. (2014). Remote technical communicators: Accessing audiences and working on project teams. *Technical Communication*, *61*, 95–109.

Robinson, J. (2016). Look before you lead: Seeing virtual teams through the lens of games. *Technical Communication Quarterly*, *25*, 178–190. doi: 10.1080/10572252.2016.1185159

Rose, E., & Tenenberg, J. (2015). UX as disruption: Managing team conflict as a productive resource. *International Journal of Sociotechnology and Knowledge Development*, *7*(3), 1–19.

Rude, C., & Eaton, A.. (2011). *Technical Editing* (5th ed.). Allyn & Bacon Series in Technical Communication. New York, NY: Longman.

Sabane, A. (2012, August). Confluence for collaborative technical publications. TC World. Retrieved from http://www.tcworld.info/e-magazine/technical-communication/article/confluence-for-collaborative-technical-publications/trackback/

Salisbury, G. (2010, April). Running a successful in-house translation department. TC World. Retrieved from http://www.tcworld.info/e-magazine/translation-and-localization/article/running-a-successful-in-house-translation-department/

Salvo, M. J. (2004). Rhetorical action in professional space: Information architecture as critical practice. *Journal of Business and Technical Communication*, *18*, 39–66.

Saval, N. (2014). *Cubed: A secret history of the workplace* (1st ed.). New York, NY: Doubleday.

Schmitz, K. (2013, November). The terminologist. TC World. Retrieved from http://www.tcworld. info/e-magazine/technical-communication/article/ the-terminologist/

Schreiber, J. (2017). Toward a critical alignment with efficiency philosophies. *Technical Communication*, *64*, 27–37.

Schwarzman, S. (2011). *Technical writing management: A practical guide.* Publisher: Author.

Sigman, C. M. (2007). Adapting to scrum: Challenges and strategies. *Intercom*, *54*(7), 16–19.

Slattery, S. (2007). Undistributing work through writing: How technical writers manage texts in complex information environments. *Technical Communication Quarterly*, *16*(3), 311–325. doi:10.1080/10572250701291046

Smith, K., & Gale, P. (2014). Turning obstacles into opportunities: Agile for technical communication. *Intercom*, *62*(10), 6–9.

Smith, K. A., & Imbrie, P. K. (2012). *Teamwork and project management* (4th ed.). Boston, MA: McGraw-Hill Higher Education.

Spinuzzi, C. (2013). *Topsight: A guide to study, diagnosing, and fixing information flow in organizations.* Publisher: Author.

Spinuzzi, C. (2015). *All edge: Inside the new workplace networks*. Chicago, IL: University of Chicago Press.

St.Amant, K., & Meloncon, L. (2016). Addressing the incommensurable: A research-based perspective for considering issues of power and legitimacy in the field. *Journal of Technical Writing and Communication*, *46*, 267–283. doi:10.1177/0047281616639476

Sturz, W. (2012, September). Sharing knowledge adds value to organizations. TC World. Retrieved from http://www.tcworld.info/e-magazine/technical-communication/article/ sharing-knowledge-adds-value-to-organizations/

Suchan, J. (2006). Changing organizational communication practices and norms: A framework. *Journal of Business and Technical Communication, 20*, 5–47. doi:10.1177/1050651905281038

Swarts, J. (2008). Information technologies as discursive agents: Methodological implications for the empirical study of knowledge work. *Journal of Technical Writing and Communication*, *38*, 301–329.

Swinson, I. (2014). A UX career framework: Driving conversations between managers and employees.

User Experience Magazine, *14*(2). Retrieved from http://uxpamagazine.org/a-ux-career-framework/

Tebeaux, E., & Dragga, S. (2015). *The essentials of technical communication* (3rd ed.). New York, NY: Oxford University Press.

Tomlin, R. C. (2008). Online FDA regulations: Implications for medical writers. *Technical Communication Quarterly, 17*, 289–310. doi:10.1080/10572250802100410

Torraco, R. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, *4*, 356–367.

Vang, E. Project management. In R. Gallon (Ed.), *The language of technical communication*. Laguna Hills, CA: XML Press.

Vakaloudis, A., & Anagnostopoulos, K. (2015). Maximising productivity and learnability in internships. Paper presented at the IEEE 2015 ProComm Conference. doi: 10.1109/ IPCC.2015.7235826

Vitas, B. (2013). Community-driven information quality standards: How IBM developed and implemented standards for information quality. *Technical Communication*, *60*, 307–315.

Voss, D., & Flammia, M. (2007). Ethical and intercultural challenges for technical communicators and managers in a shrinking global marketplace. *Technical Communication, 54*, 72–87.

Walton, R. (2013) How trust and credibility affect technology-based development projects. *Technical Communication Quarterly*, *22*, 85–102, DOI: 10.1080/10572252.2013.726484

Walton, R., Mays, R. E., & Haselkorn, M. (2016). Enacting humanitarian culture: How technical communication facilitates successful humanitarian work. *Technical Communication, 63*, 85-100.

Weimann, P., Pollock, M., Scott, E., & Brown, I. (2013). Enhancing team performance through tool use: How critical technology-related issues influence the performance of virtual project teams. *IEEE Transactions on Professional Communication*, *56*, 332–353.

Welchman, L. (2015). *Managing chaos: Digital governance by design*. New York, NY: Rosenfeld Media.

Wellings, C. (2009, June). Intercultural management: Leading an international team. TC World. Retrieved from http://www.tcworld.

Integrative Literature Review

info/e-magazine/international-management/
browse/2/article/intercultural-management-leading-
an-international-team/

Westerman, C. Y. K., & Smith, S. W. (2015). Opening a performance dialogue with employees: Facework, voice, and silence. *Journal of Business and Technical Communication*, *29*(4), 456-489. doi:10.1177/1050651915588147

Willerton, R. (2008). Writing toward readers' better health: A case study examining the development of online health information. *Technical Communication Quarterly, 17,* 311–334. doi:10.1080/10572250802100428

Winsor, D. (1999) Genre and activity systems: The role of documentation in maintaining and changing engineering activity systems. *Written Communication, 16,* 200–224.

Winsor, D. A. (2003). *Writing power: Communication in an engineering center*. Albany, NY: State University of New York Press.

Wolfe, J. (2010). *Team writing: A guide to working in groups*. Boston, MA: Bedford/St. Martin's.

Yates, J., & American Council of Learned Societies. (1989). *Control through communication: The rise of system in American management*. Baltimore, MD: Johns Hopkins University Press.

Yeng, S. (2013, October). What constitutes a healthy localization department? TC World. Retrieved from http://www.tcworld. info/e-magazine/business-culture/article/ what-constitutes-a-healthy-localization-department/

Zerfaß, A., & Schildhauer, E. (2009, December). Building a localization framework. TC World. Retrieved from http://www.tcworld.info/e-magazine/translation-and-localization/article/ building-a-localization-framework/

About the Authors

Benjamin Lauren is an Assistant Professor in the Department of Writing, Rhetoric, and American Cultures at Michigan State University, where he teaches in professional writing, experience architecture, and rhetoric and writing. He is also an Assistant Director of the graduate program in Rhetoric and Writing. His work has been published in *Technical Communication*, *Computers and Composition*, the *Journal of Technical Writing and Communication*, *Intercom*, *User Experience Magazine,* and *Transactions on Professional Communication*. He is available at blauren@msu.edu.

Joanna Schreiber is an Assistant Professor of Professional and Technical Communication at Georgia Southern University, where she is coordinator of technical and professional writing courses. She currently serves as Treasurer for the Council for Programs in Technical and Scientific Communication (CPTSC) and as Book Review Editor for *Programmatic Perspectives*. Her research focuses on the ways in which communication practices inform and are informed by efficiency management practices, and her work has been published in *Technical Communication* and *Technical Communication Quarterly.* She is available at jschreiber@georgiasouthern.edu.

Experience Professional Growth with STC Education!

STC offers a wide variety of online education options throughout the year. Whether you need an introduction to a subject, an in-depth review, or just a brush-up, STC has what you need. Advance your career with STC's varied collection of online education.

Live Weekly Webinars

Multi-Week Online Courses

Recorded Webinars

Free On-Demand Seminars
(Members Only)

STC

Visit stc.org/education

Jackie Damrau, Editor

Books Reviewed in This Issue

What Customers Crave: How to Create Relevant and Memorable Experiences at Every Touchpoint

Nicholas J. Webb. 2016. New York, NY: AMACOM. [ISBN 978-0-8144-3781-0. 258 pages, including index. US$25.00.]

In *What Customers Crave: How to Create Relevant and Memorable Experiences at Every Touchpoint*, Webb encourages us to rethink customer service by exchanging the word "service" for "experience." He says, "In today's hyper-connected, hypercompetitive business world, old ways of providing customer service are failing" (p. 1). We must reassess what we think we know about customers to breathe life back into the customer experience.

Two questions are at the core of Webb's strategy: What do customers love? What do they hate? To find out, we must identify our customer types and use this knowledge to invent relevant customer experiences. According to Webb, customer typing "helps you move from *what* your customers are to *who* they are" (p. 28). And when we know what our customers love and hate, we begin to truly understand who they are. Today, we can gather limitless amounts of customer data through digital means such as social media and e-commerce. But Webb reminds us to also meet in the "non-digital" world and physically experience what our customers experience.

In the second half of *What Customers Crave*, Webb describes five customer experience touchpoints and insists that exceptional experiences must be delivered at all five points. The "pre-touchpoint" occurs before customers decide to engage with a product or service. The "first touchpoint" is the first impression like the greeter at a store or a Web site's landing page. The "core touchpoint," when customers actively engage with a product or service, can be problematic for organizations if they "transform from being **customer-centric** to **operations-centric**" (p. 167). The "last touchpoint," when delivered effectively, establishes a memorable experience that keeps customers wanting more. The "in-touchpoint," driven largely by content marketing, can nurture "existing and past customers by sending them a constant stream of value" (p. 203).

Knowing our customers empowers us to innovate and invent—but Webb says we should strive to "disrupt" the customer experience, not merely enhance it. In his words, "The problem occurs when we look at innovation to create new profit centers rather than to deliver better human experiences" (p. 59).

So, what can technical communicators take away from the customer experience discussion? Upon finishing Webb's book, I was reminded of the following: Content, no matter what the subject or purpose is, can be exceptional. It can be innovative in a disruptive way. Great content builds customer loyalty and promotes brand advocacy, which in turn drives sales. In today's competitive landscape, our roles are changing and the call to innovate is no less imperative for us than for any sales or marketing team. Companies "touch" their customers at many different points, and technical communication can be an integral part of any touchpoint. In Webb's words: "Remember, whether you're selling a product or a service, you are in the customer experience business" (p. 116).

Amy Dunbar

Amy Dunbar is an STC member and a technical writer for Pearson VUE in Bloomington, MN. She has a degree in biology and a graduate certificate in technical communication from the University of Minnesota. Amy's professional interests include content marketing, video production, and information design.

Type Tells Tales

Steven Heller and Gail Anderson. 2017. New Haven, CT: Yale University Press. [ISBN 978-0-300-22679-9. 224 pages, including index. US$45.00 (softcover).]
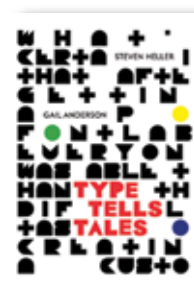
Type Tells Tales is an artful exploration of the boundaries of type. This lavishly illustrated, full-color tome is a pleasure to thumb through, and its generous size (9½×13½") makes it a suitable addition to your home coffee table or office waiting area. If curling up on the couch and thumbing through contemporary examples of innovative typographic design sounds like a good way to spend an afternoon (really, what could be better?), then *Type Tells Tales* won't disappoint you.

Not only is the book gorgeously illustrated, but the writing is richly appointed with adjectives, so that it paints a vivid tapestry of the lives and techniques of the various graphic designers and typographers featured.

Turn to any page, and you are instantly transported to the time and place in which each designer pushed the boundaries of his or her craft.

Heller and Anderson do not set out to showcase pristine, unobtrusive typography. Nor do they set out to prescribe best practices in type selection or layout. Instead, they strive to celebrate the "well-meaning heretics" who have challenged traditional principles of typography and media and have sought to innovate and disrupt. Heller and Anderson contend that type *is* content and that "type and letters are not passive, but are active participants in an entire composition" (p. 15). Typography's symbiotic influence with architecture is often cited in typography books as a way of understanding the different styles of type, but *Type Tells Tales* asserts that at least since the late 19th century, typography has spurred social, technological, and political upheavals in Western nations.

The book is organized in such a fashion that you can jump in and out without having to read sequentially. Each profile is a snapshot of a designer and his or her work. This allows you to flip through and stop when something catches your eye. This makes finding inspiration and contextualizing design an easy process. The profiles not only discuss the lives of the artists, but also explain their processes. The artists represented span the early 20th century to present day, from a variety of countries around the world. On one page, you can read about how a designer was slain by the SS (Schutzstaffel) during World War II, and on another you can learn about how a designer developed a beautiful wedding suit lining that depicted typeset online chats with his bride-to-be. The variety of artists, design styles, and media profiled in 219 pages is breathtaking.

While *Type Tells Tales* ostensibly promotes pushing the boundaries of type by shaping it to fit the unique situation, the type set by the authors represents a pretty staid template. The table of contents and chapter pages seem to be the only areas the authors took risks with their own type. This seems to indicate that the form of type must still follow the function of reading.

Michael Opsteegh

Michael Opsteegh is an STC Senior Member and a technical writer in the software and financial services industries since 2004. He is a lecturer in the technical communication program at Cal State Long Beach. Michael holds a master's degree in English and is a Certified Technical Professional Communicator (CPTC).

The Routledge Handbook of Metaphor and Language
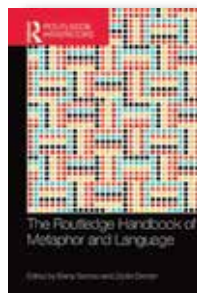
The Routledge Handbook of Metaphor and Language collects 34 essays that examine how metaphor works in language. The background theory that the authors use is one developed by Lakeoff and Johnson as well as Gibbs and theorizes about how metaphor and language interact at a cognitive level.

While all 34 essays contain insights for those interested in metaphor and language, a group of essays in Part V address more specific subjects. Applications of metaphors in health screening (chapters 25 and 26), business (27), education (28), and public communication of complex issues (30) offer technical communicators some familiar contexts.

Other essays that technical communicators could find interesting and useful include those on translation (17), climate change (20), politics (21), advertising (22), and online communication (24). The citations do not always intrude, interrupting the flow of the content, yet they do slow reading. But, that is the way of scholarly and academic writing.

One question technical communicators could have is why do we need metaphor to communicate? Historically, text that includes a heavy use of metaphor has been often described as "flowery" and writers should avoid it. Research, such as is contained in this *Handbook*, especially that tying metaphor to cognition, points out that language's effectiveness is diminished when devoid of metaphors.

Conceptual Metaphor Theory isn't the only theory of metaphor discussed such as Aristotelian approaches to metaphor (14, 21, 22, and 32), metaphor-led discourse analysis (6, 29), dynamics systems theory (4), and different types of theory useful for different types of metaphor.

While most readers will understand a bit of the relationship between metaphor and oral and written language, one chapter (18) looks at metaphor in sign language—an area many might overlook when studying metaphor, language, and cognition. Other areas one might not think of when studying metaphor include

metaphor and gesture studies, historical linguistics, language acquisition, second language teaching and learning, politeness/impoliteness, and empathy. In short, *The Routledge Handbook of Metaphor and Language* covers a broad range of specialties and covers much more than these areas. For example, several essays discuss metaphor in languages other than English and would prove valuable for technical communicators who translate and localize information.

In summing up their overview of the book, the editors comment that "one theme emerges again and again: the ability of metaphors to 'frame' topics and ideas in particular ways" (p. 9).

For technical communicators who have an interest in language and how it works, this *Handbook* would be a valuable asset. For technical communicators looking to improve the quality of their information, the handbook would also be a valuable asset. While the price may stop many from acquiring a personal copy, it certainly should be in a company library. Students, in technical communication classes and other language classes, as well as their faculty, will also find value in the *Handbook*.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

Creativity without Law: Challenging the Assumptions of Intellectual Property

Kate Darling and Aaron Perzanowski, eds. 2017. New York: New York University Press. [ISBN 978-1-4798-5624-4. 280 pages, including index. US$30.00 (softcover).]
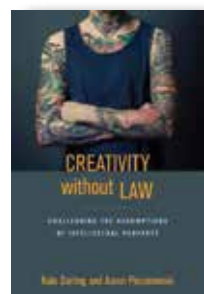
Intellectual property theory rests on a dominant narrative, a set of assumptions about how creative ecosystems work, the motivations and incentives that drive creativity, and the role that law should play in spurring innovation. Central to that narrative is the assumption that legal protection against copying through "rights exclusion"—copyright and patents—is necessary for creative behavior to occur.

While the dominant narrative is logical and has powerful advocates, it is not without problems. The legal-centric, "right exclusion," approach is complex, expensive, and subject to abuse.

The editors of *Creativity without Law: Challenging the Assumption of Intellectual Property* argue that the role of "rights exclusion" in promoting creativity has been subjected to "surprisingly little scrutiny" (p. 1), and that this lack of scrutiny has produced a legal-centric IP system that displays "a troubling insensitivity to the specific needs of particular creative communities" (p. 2).

While conceding that there are important areas that closely fit the dominant narrative—movie production, pharmaceutical research—*Creativity without Law* makes its case by looking at counter examples.

In a series of fascinating studies by various authors, the book investigates the dynamics of creative activities and subcultures that manage to thrive without the protection of law, either because the law does not reach the activity, or because the community involved would rather regulate itself. Among the creative subcultures investigated are French chefs and recipe creation, designer cocktails creation, medical procedure innovation, tattooing, street art and graffiti, Roller Derby, adult entertainment (pornography), fan fiction, and Nigerian movie production.

While the specifics vary tremendously, each of the examined creative communities functioned differently from what the dominant narrative would have predicted. For example, in many communities, reputation and social esteem proved to be stronger incentives for creativity than financial gain. Also, each community showed a remarkable capacity for self-regulation, primarily through the development of behavioral norms to govern such things as the conditions under which sharing and copying can occur. Often, social pressures ranging from bad-mouthing to ostracism were used to discipline those who violated norms. In short, in the absence of legal protections, each had worked out unique systems of norms for policing themselves and providing the right balance of incentives and controls to allow the creative community to thrive.

They also showed flexibility in other ways. Some found that a certain amount of copying and imitation was beneficial because it established trends and fueled demand, while others adjusted their business model to take the prevalence of copying into account.

If our goal is to maximize innovation and creativity, it behooves us to know as much as possible about how creative communities operate and regulate themselves "on the ground." The studies in *Creativity without Law* go a long way toward calling long-held assumptions into question, and provide a good starting point for further investigation.

Patrick Lufkin

Patrick Lufkin is an STC Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

Fundamentals of Project Management

Joseph Heagney. 2016. 5th ed. New York, NY: AMACOM. [ISBN 978-0-8144-3736-0. 228 pages, including index. USD$17.95 (softcover).]

Currently serving as a faculty member of the American Management Associate, author Joseph Heagney previously served as the global leader for project management best practices for the same group. With *Fundamentals of Project Management* in an impressive fifth edition, Heagney must be doing something right as he continues to have impressive sales of the series. In this edition, he covers topics related to the latest version of the *Project Management Body of Knowledge (PMBOK® Guide)* and the project management basics.

Stakeholder management, creating a communication plan, estimating, and project closure appear as new topics in *Fundamentals of Project Management*. Heagney argues that the goal of effective project management today remains to execute a project on time, within budget, and within scope. What changed includes approaches and techniques to achieve that goal.

What percentage of projects currently succeed in meeting their goals of being on time and within budget? Heagney addresses this when he notes that the percentage remains "flat at 64 percent between 2012 and 2015" (p. xi). This is according to the "Pulse of the Profession" report published by the Project Management Institute. Heagney goes on to note that high performing organizations today "drive project management and meet original project goals and business intent two-and-a-half times more often" (p. xi) when compared to low performers.

Heagney defines stakeholders as "anyone who has a vested interest…in the outcome of the project" and notes that they have a "direct effect on whether your project will succeed or fail" and should be "managed throughout the life of the project" (p. 47). He gives tips on how to deal with stakeholders in the context of cultural factors and how best to communicate.

Overall, for project managers today to stay effective they must adjust for factors such as "technological advances, workplace demographics, [and] global reach" (p. xii). That is how Heagney sees it as he asks you to "learn from the past—and look to the future" (p. xii). That sounds like great advice.

One of the exercises (p. 45) in the current edition of *Fundamentals of Project Management* is for you to answer the question, "Which must be decided first for effective project management planning?"
  a. Strategy
  b. Tactics
  c. Logistics
  d. Does not matter

You should enjoy reading the book to get the answer Heagney provides.

Jeanette Evans

Jeanette Evans is an STC Associate Fellow and active in the NEO community. She holds an MS in technical communication management from Mercer University. Jeanette is co-author of an STC Intercom column on emerging technologies in education and writes on other topics related to project management.

Documenting the World: Film, Photography, and the Scientific Record

Greg Mitman and Kelley Wilder, eds. 2016. Chicago, IL: University of Chicago Press. [ISBN 978-0-226-12911-2. 285 pages, including index. US$35.00.]

What does photography—still or motion—contribute to our picture, our image, our understanding of historical events and the world in general? Mitman and Wilder attempt to answer this question in *Documenting the World: Film, Photography, and the Scientific Record*. And in many ways, the book's contributors have done a superb job answering the editors' question.

"Documentary images matter in the way that people imagine the past, make sense of the present, and envision the future" (p. 4). When we think of seminal events like the Great Depression, Auschwitz, the Apollo moon landing, or Kennedy's assassination—what role does film play, compared to reading about them?

The Depression is a prime example: What would Americans' sense of the Great Depression be, without those images captured on film and stills; images of sharecroppers, migrant workers, and the urban poor? How many people still read the great fictional exposés by Sinclair Lewis and Frank Norris? Still, in the 21st century, with its ever-present stress on visual culture, such events may seem vague, hollow, imprecise—even unscientific without the visual image.

When considering the deeper effects of print versus film, the book skips one important question: To what extent does one complement or replace the other? In some ways, visuals capture more details than print. In other ways, words can go into details that visuals cannot—specifically, with more abstract concepts that are not captured in "natural" photography.

What are some fields photography has had a major impact on? They include visual anthropology and art history, besides documenting great historical events where possible. Other areas of impact include images for the travel industry, the role of visuals as evidence in the legal system, and in almost every area of science.

Photos and film can still be so easily "repurposed." The visual record is anything but neutral. Think of the role of film for propaganda; a prime example being Leni Riefenstahl's "Triumph of the Will;" Hitler's coming out party for the new Aryan Race, in the 1936 Berlin Olympics.

As for the effect of photography on people's thinking, *Documenting the World* points out that the introduction of the still camera in 1838 developed ordinary people's (nonscientists) powers of observation; churning out "observers of very high quality" and resulting in what one scholar referred to as "the cult of observation" (p. 12). "The camera elevated the everyday to the status of scientific objects across the…human and life sciences" (p. 12), and in this way, provided what another specialist termed "a new medium of seeing" (p. 13).

As technical communicators, we tend to limit our use of visuals to non-photographic images such as charts, graphs, and diagrams. But there are places where film—stills or motion—are the best way to communicate the information. And it's in those places where we need to consider these elements in our project. *Documenting the World* helps develop our sensitivity to photographic media.

Tetyana Darian

Tetyana Darian is an STC member and graduate student in mathematics. Her interests are in graph theory and its applications. Tetyana is also a part-time lecturer, teaching introductory mathematics courses.

Mass Media and Health: Examining Media Impact on Individuals and the Health Environment

Kim Walsh-Childers. 2017. New York, NY: Routledge. [ISBN 978-1-138-92560-1. 520 pages, including index. USD$44.95 (softcover).]
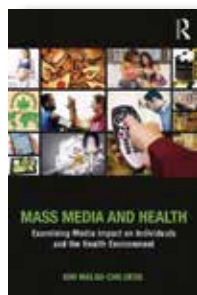
Mass Media and Health: Examining Media Impact on Individuals and the Health Environment reviews numerous studies on various aspects of mass media's influence on both individual health behaviors and health policy. It grew out of its author's teaching activities. Despite its scholarly character, each chapter opens with a personal story of media consumption related to the health issue covered in that chapter. However, each chapter also includes an extensive list of references. The heavy use of statistics and meticulous annotation of all facts and figures cited make the book

quite useful for students and others in academia. On the other hand, these features also make it less-than-ideal bedtime reading for the casual reader.

Walsh-Childers discusses tobacco, alcohol and consumer-focused medication advertising, and the effects of media portrayals on food consumption, body image, sexual health, violent behavior, and use of street drugs, among other issues. The section on policy effects is much smaller than that on individual behavior and covers the effect of health news, media advocacy, and issue advertising on political decision-making. A separate chapter discusses the influence of social media posts, blogs, and other more personal forms of online media on people's health-related decisions.

Perhaps because of when studies on specific topics were conducted, the timeframe for the statistics cited varies widely, with some as old as the late 1990s. Given the rapid change in media technology and the uneven distribution of that technology across demographic groups, it is difficult to draw conclusions over time. The relatively long publishing cycle for print publications may also make the more current statistics in *Mass Media and Health* outdated before an updated edition is available to the public. Walsh-Childers acknowledges this problem, for example, when discussing violent video games, which were last comprehensively analyzed before 2005. Gaming content and graphics—such as the quite realistic imagery and 360-degree views of current first-person shooters—have changed drastically since then.

The book provides an overview of the various issues, so research delving into demographic differences in media use and health behaviors may lay outside its scope. However, such studies could prove illuminating. For example, one study cited found that "more time spent reading health magazines predicted a lower likelihood of smoking" (p. 370). It would be interesting to examine the characteristics of such magazines' readership before that study.

Overall, the large number of references makes *Mass Media and Health* a useful tool for journalists and others writing on the topics it covers. The book's structure and use of statistics also serves media studies or medical communications teachers, who may want to assign it as a textbook.

Barbara Jungwirth
Barbara Jungwirth writes about medical topics (www.bjungwirth.com) and translates medical and technical documents from German into English (www.reliable-translations.com). She has written for print and online media since her high school days and majored in media studies. You can find her on Twitter at @reliabletran.

LinkedIn Profile Optimization for Dummies
Donna Serdula. 2017. Hoboken, NJ: John Wiley & Sons, Inc. [ISBN 978-1-119-28708-7. 324 pages, including index. US$26.99 (softcover).]
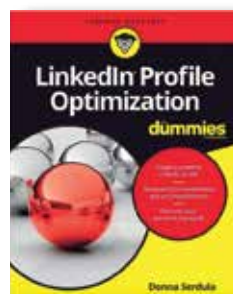
If you have recently attended a networking event and swapped contact information with your new contact, the odds are that at least one of your contacts has sent you an invitation to connect on LinkedIn, a professional networking site. While LinkedIn is free to join and makes it easy to create a personal profile, most people do not take the time to learn the nuances of crafting an effectively presented LinkedIn profile. How much detail do you add? Is it worth including a photo? How similar to my résumé should it be? What do I place in my profile summary? These are all questions that *LinkedIn Profile Optimization for Dummies* adroitly handles.

Much like other books published under the "For Dummies" series, this book strives to simplify a sophisticated concept, in this case, LinkedIn. Serdula divides the book into several sections, such as "Getting Your LinkedIn Profile Started," and even recommends which sections to pay extra attention to if you're short on time. The chapters within each section clearly build on one another and help guide both new and experienced users. New LinkedIn users will find step-by-step instructions to walk you through both simple and complex tasks alike. For seasoned users, Serdula delves into the deeper regions of LinkedIn, such as groups, influencers, and personal branding. People of all experience levels can benefit from her lists of keywords that help flesh out your descriptions in a professional but eye-grabbing manner. The books doubles as a workbook, so if you are creating your profile while reading straight through the book, each section builds on the previous content you added to LinkedIn. Its generous illustrations, clear instructions, and logical organization create a sound paper-based experience for upgrading your electronic persona.

Even if you consider yourself an expert in social networking, *LinkedIn Profile Optimization for Dummies* has something for you. Perhaps your personal summary

is not up to par, your email address not trendy enough (avoid AOL or Hotmail or else be screened as a technical dinosaur, warns Serdula), or maybe your professional photo doesn't do you justice. Throughout the book, Serdula uses her own LinkedIn profile as an example so you can see exactly how she puts her recommendations into practice. Overall, I see *LinkedIn Profile Optimization for Dummies* as an excellent resource to help you bridge the gap between traditional résumés and new online professional networking.

Timothy Esposito

Timothy Esposito is an STC Associate Fellow with over 15 years of technical communication experience. He is currently president of the STC Philadelphia Metro Chapter. Before becoming president, Timothy was chapter vice president, treasurer, webmaster, and scholarship manager.

Current Practices and Trends in Technical and Professional Communication

Stephen Crabbe, ed. 2017. Croydon, U.K.: Institute of Scientific and Technical Communicators. [ISBN 978-0-9506459-9-5. 350 pages, including index. USD$44.50 (softcover).]
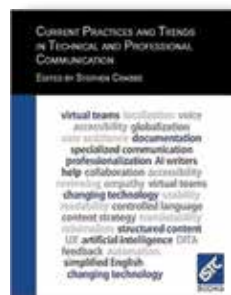
Several years ago, STC had a publications group that published printed materials for practitioners and students. Topics ranged from glossaries and estimating illustration costs, to writing proposals, basic articles for the beginners, and much more. Costs and the digital age led to the program's demise.

In Europe, national technical societies also provide education for their members. For example, in the UK in 2001, the Institute of Scientific and Technical Communicators (ISTC) published an anthology entitled *Technical Communication and Information Design*. This year, they have published a new anthology, *Current Practices and Trends in Technical and Professional Communication*. In 16 chapters divided into three parts, authors explore writing technical communications (6 chapters), resources for technical communicators (5), and the role of technical communicators (5).

The anthology's primary readership in both the US and UK not only includes practicing technical communicators, but also students, technical communication teachers, and program directors. In the US, teachers and directors can find not only current practices in the UK that are mirrored in the US, but the research behind them. That alone makes *Current Practices and Trends* valuable, deserving a major role in professional development.

The anthology's authors are about evenly divided between academics and non-academics. One major difference from similar anthologies is that the academics are also practicing technical communicators as well as teachers. They, therefore, know not only content and how work progresses, but also know how to present it for learning.

An excellent example of an essay applicable to all technical communication programs and practitioners is the chapter on style (Chapter 3). What style should students learn and use? What style should technical communicators practice? Edwards makes a strong case for a personalized style—there being, in his opinion, no such thing as a "neutral" style.

Two chapters discuss applying theory to technical communication: Chapter 8 uses systems thinking for complex documents, and Chapter 14 applies risk management to document reviewing.

The last essay (16) discusses the possibility of computer-based Artificial Intelligence (AI) writers working on teams with human technical communicators. Lawrence and Green base their assessment of AI writers on the STC Body of Knowledge. They argue that an AI writer can contribute to Technical Writer Level I positions as well as being useful for Levels II and III. As you read this essay, you begin to wonder if the chapter itself were written by an AI writer because of the style and vocabulary. I think at least some of this chapter was written by an AI writer, but you will have to read it yourself and judge.

For US students, teachers, and program directors, as well as practicing technical communicators in both countries, this anthology offers considerable value for money. While it has some elements that are unique to the UK, most of the material is equally applicable to the US.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. He is a Horace Hockley Award winner as well as past president of INTECOM and served as guest professor at the University of Paderborn, Germany.

Communicating Science: A Practical Guide for Engineers and Physical Scientists

Raymond Boxman and Edith Boxman. 2017. Hackensack, NJ: World Scientific Publishing. [ISBN 978-981-3144-23-1. 276 pages, including index. USD$32.00 (softcover).]

The importance of effective scientific communication cannot be underestimated. With numerous books on the subject, I wondered what made *Communicating Science: A Practical Guide for Engineers and Physical Scientists* different from the others. Three aspects stand out: It covers relevant genres for its researcher and graduate student audience, includes abundant and helpful examples, and offers effective writing strategies.

The introduction, however, gives readers a false sense of what follows in subsequent chapters. The perspective portrayed in the opening comes across as limiting, portraying scientific writing through the stereotypical lens of being a mode of transmission, promising "recipes" (p. 3) for writing, and even includes the clichéd statement: "Scientific writing uses limited vocabulary and grammatical forms, it is conventional and the emphasis is on clarity and not on linguistic gymnastics" (p. 4). Fortunately, this perspective does not manifest in the rest of the book.

Communicating Science first addresses technical reports and scholarly articles since engineers and scientist spend much of their time writing to other technical personnel. The authors thoroughly explain and provide examples of the prewriting activities, such as developing solid research questions, understanding audience, and planning. Even though the content of reports and scholarly papers vary depending on companies and journals, these sections are discussed in detail and supported with numerous examples using topics on engineering and physical science. Emphasis is placed on the critical aspects of these sections, such as the first sentence in the introduction, identifying a gap in research, and the purpose statement. The methods, results, discussion, and conclusion sections are broken down into subsections that many engineers and physical scientists will find relevant to their work, including creating effective, ethical figures and tables. The examples in each chapter are especially impressive. There is an explanation about how to write a particular document section, a table of examples usually follows, and within the table the authors explain the examples as meeting or not meeting the previously discussed criteria.

Subsequent chapters address genres used for non-technical and general audiences, such as conference presentations, proposals, business plans, patents, popular media, and correspondence for job searches. Of importance is how one communicates with technical audiences and the public as they have quite different interests. Public audiences are "particularly interested in the human aspects" (p. 156) of engineering and scientific projects. They want to know how those projects or the science "affect[s] them personally, or at least how they may affect other people or even humanity" (p. 156). Pointing out the different interests helps scientists communicate their research in more compelling ways that allow people to understand their work and care about it too.

Communicating Science has definite value for students and practicing scientists, even experienced practitioners. Science is very much a part of the public domain today. It is critical that scientists know how to convey ideas clearly and coherently to various audiences, which this book covers quite well.

Diane Martinez
Diane Martinez is an assistant professor of professional and technical communication at Western Carolina University. She previously worked as a technical writer in engineering, an online writing instructor, and an online writing center specialist. She has been with STC since 2005.

Rhetoric of Logos: A Primer for Visual Language

Eduard Helmann and Brian Switzer, eds. 2016. New York, NY: Niggli. [ISBN 978-3-7212-0957-0. 144 pages, including index. US$29.95 (softcover)E.]

In the *Rhetoric of Logos: A Primer for Visual Language*, Helmann and Switzer explore logo design through the lens of classical rhetoric, applying the appropriate theories and translating them to design for visual communication. The editors state that a goal for the work is to find a more scientific, less objective approach to evaluating the effectiveness of logo designs of which Helmann's ideas are intriguing to say the least.

Broken up into three sections, the book starts out a bit slow, with a section on history of logo design, but picks up as it nears the content's heart, the analysis of rhetoric devices found in logos.

The history section, "In the beginning was the brandmark", is overly simplified in such a way that you begin to wonder why it was included at all, especially the very narrow timeline the editors chose to include. Regardless of this issue, the section does include interesting details about the history and use of heralds by knights as well as coats of arms used by guilds that are not often included in history texts, despite the distinct connection to the development of logos and eventually brand design. *Rhetoric of Logos* starts to pick up at the end of the section, in "Five elements"; however, it would have been beneficial if the editors had spent more time here as well. The terms and definitions in this section are not as clear as they could be, a problem that seemed to be an issue throughout the text.

The next section includes an analysis of logos using classical devices of rhetoric, including a brief description of each device and examples of (mostly) well-known logos for each. While this breakdown is fascinating, it seems that a little more information on how the examples fit each of the devices is warranted so that readers can apply this logic to their own logo design evaluation.

The final section is a bit hard to define. Although it seems that it might provide the methods for evaluating logos using persuasional methods of rhetoric, including logos, ethos, and pathos, there is not much detail provided on how the editors go about the evaluation, making it difficult once again for readers to replicate. This section, as in the previous, would benefit from a well-defined tool.

One main weakness of this book is that the editors assume a lot of knowledge from the reader; the work would benefit from more in-depth explanations. The text has much to offer regarding value and insight but needs to be revised to appeal to a broader audience of graphic designers and design students. In its current state, *Rhetoric of Logos* reads as an abbreviated master's thesis study and seems a little too formal in its approach for the average reader. This book will appeal mostly to academics and extreme branding enthusiasts; however, a more thorough account would be largely beneficial to students of logo and brand design. This seems to be an early work on the subject and one in which this reviewer looks forward to seeing where this study progresses.

Amanda Horton

Amanda Horton holds an MFA in Design and currently teaches graduate and undergraduate courses at the University of Central Oklahoma (UCO) in the areas of design technology, design studio, and history of graphic design. Ms. Horton is also the director of the Design History Minor at UCO.

Secret Sauce: How to Pack Your Messages with Persuasive Punch

Harry Mills. 2017. New York, NY: AMACOM. [ISBN 978-0-8144-3806-0. 184 pages. US$18.95.]

In *Secret Sauce: How to Pack Your Messages with Persuasive Punch*, the overall premise is a practical formulaic system that will help you communicate influentially in today's digital environment. After an introduction of Mills' argument that viewers are increasingly becoming desensitized and harder to reach because of an information surplus, he walks you through a step-by-step process known as the SAUCE (Simple, Appealing, Unexpected, Credible, and Emotional) method and how to achieve it.

The first half of the book provides a thorough, yet concise, exploration focusing on each letter of SAUCE: Simple–stick to one thing; Appealing–personalized to be relevant; Unexpected–the element of surprise; Credible–be honest; Emotional–make it relatable. Each of these chapters concludes with a 3-question test that will help you determine the persuasiveness of a message within that category (letter). This score is later plugged into the "heat gauge" to show how effective the message is overall.

In the second half, Mills presents lessons that reference case studies, experiments, and analysis of branding failures and triumphs. From J.C. Penney to slot machines to documentaries to littering, Mills uses academic worthy citations of psychological and scientific data while maintaining a casual tone throughout proving his theory—it matters how you craft a message. Illustrated charts, lists, and diagrams scatter throughout the pages and is another way that Mills uses his own method—creating the unexpected with stylistically playful graphics that break up the content making it easy to get through.

Secret Sauce is a compact book in dimension and page count and plays out like a pocket guide/workbook for knowing how to communicate messages effectively, so they receive the attention they deserve. This book is a good option for researchers, writers, and those in the creative industry.

Lanie Gabbard
Delana (Lanie) Gabbard is an associate professor of graphic design with a specialty in typography at the University of Central Oklahoma after several years of working professionally as a graphic designer. She is an award-winning designer and has been published academically and online.

Introducing Language and Cognition: A Map of the Mind

Michael Sharwood Smith. 2017. Cambridge, U.K.: Cambridge University Press. [ISBN 978-1-316-60670-4. 224 pages, including index. USD$29.99 (softcover).]
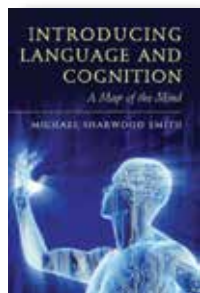
A major question that has long puzzled philosophers and scientists is, "What is the mind?" Once that is answered, then many other questions suggest themselves such as, "How is the mind related to, among other things, the brain and consciousness?" Attempts to answer narrower questions follow: "Is mind the same as soul?" "How does language relate to mind, brain, consciousness, soul, and so forth?" Sharwood Smith's *Introducing Language and Cognition: A Map of the Mind* attempts to answer several of these questions.

He begins with an "Introduction" and ends with a "Conclusion;" both with an overview and summary. The chapters open with "In This Chapter" and close with a "Summary." Other aides for the reader include an annotated abbreviation list, glossary, and references.

He divides his subject into two parts: Part I addresses the "Mechanisms of the Mind" (eight chapters) and Part II addresses "Language(s) in the Mind" (seven chapters). In a lengthy Introduction, Sharwood Smith suggests that mind is composed of modules, corresponding roughly to the senses. Each module is part of what he calls a "framework" and has a processor and memory store. Chapter 1 explains the basic design, and chapters 2 and 3 cover perception and motion. He explains meaning (4); emotions (5); memory, processing, and activation (6); consciousness and attention (7); and developing knowledge and ability (8). Collectively, these chapters introduce the reader to his framework or map of the mind that he later calls a "mind-web."

Part II presents his views on how language will work in the mind. Language, he argues in chapter 10, consists of phonological and syntactic structures and is called "the core system." He then looks beyond this core to structures outside the core: sounds, meanings, and language. His point is that we experience a world that we think is an external context forgetting that what we experience is a re-creation of the outside context by the inside context.

Because his assumed readers are researchers beginning to do research in language and the mind, the typical technical communicator will have problems with this book. However, those who want to understand more thoroughly the user of technical documents will find much to think about. Graduate students in technical communication who are considering how users respond will also find much to think about, and those taking communication theory seminars as well as faculty working or teaching in this area will also gain the most from Sharwood Smith's theory.

What's the point for technical communicators? How do they improve their technical communication? Because a module receives language input, does the user have appropriate structures to process it? If so, then processing occurs. If not, then the receiving module must develop a structure or structures before continuing the process. Is that enough for the technical communicator to read the book?

Sharwood Smith has given technical communicators much to think about when considering the user. Despite being limited to specialist readers, I recommend *Introducing Language and Cognition*.

Tom Warren
Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

How to Success! A Writer's Guide to Fame & Fortune

Corinne Caputo. 2017. San Francisco, CA: Chronicle Books LLC. [ISBN 987-1-4521-4333-0. 112 pages. USD$12.95 (softcover).]
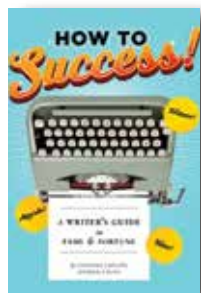
Yes, I admit it. I have a dream of becoming a famous writer. Well, the dream is more about this one book that I would like to become published and a sensational bestseller. If only there wasn't this tiny hurdle of sitting down and writing the book in the first place. Luckily, an incredible number of guidebooks for aspiring writers tell you just that. And again, I must admit, I have purchased one or the other useful and not so helpful self-help books. Quite often, these books are full of clichés and commonsense tips that don't tell you anything new.

Enter Corinne Caputo, comedy writer. Her self-help parody book, *How to Success! A Writer's Guide to Fame & Fortune*, touches a nerve. With much humor, which is blunt and of the more-is-more kind, Caputo's first book makes fun of all the very predictable and perhaps not so helpful advice you find on the book market.

My favorite elements of *How to Success!* are the illustrations, starting right with the first one: Figure 1 is called "Success" and shows a sheet of paper in a typewriter where—you guessed it—the word "SUCCESS" is printed in big letters (p. 14). This is the kind of style you can expect. For fans of subtle irony, this book is probably not for you. In a chapter called "The Elements of Style: Fashion Tips," you can find the following valuable recommendation: "Writers should generally look like they are wearing yesterday's clothes…. You can accomplish this by waking up late and wearing yesterday's clothes" (p. 20). Awesome, isn't it?

In the "How to Set a Scene" chapter, you find "SOME BLANK PAGES" (four pages altogether). Why? To help you create the appearance of productive writing: "Tear out and crumple the following blank pages and place them in your work space…For more blank pages, buy additional copies of this book" (p. 33). Brilliant advice, just what I like.

The slim book not only covers tips for becoming a writer, but addresses also what inevitably comes with success: enormous fame. In the "Preparing for Fame" chapter, you find information on topics such as "Developing your Autograph" or "Dealing with Fans," where you are, for example, told to "Politely ask, 'May I offer you my autograph' or 'You want to take a picture with me, don't you?'" (p. 107).

How to Success! is a quick read and made me chuckle. Buy this book if you need to remove the odd writer's block or just some easy and enjoyable read.

Karina Lehrner-Mayer

Karina Lehrner-Mayer is a Senior STC member, holds a degree in translation and has over 15 years' experience in technical communication. She works as a technical writer at ISIS Papyrus Europe AG, an Austrian-based company offering solutions for inbound and outbound business communication and process management.

Teaching Interculturally: A Framework for Integrating Disciplinary Knowledge and Intercultural Development

Amy Lee, with Robert Poch, Mary Katherine O'Brien, and Catherine Solheim. 2017. Sterling, VA: Stylus Publishing. [ISBN 978-1-62036-380-5. 140 pages, including index. USD$27.50 (softcover).]
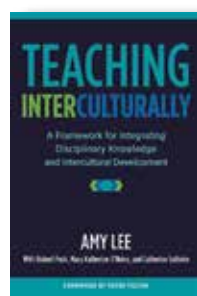
According to the timely new book, *Teaching Interculturally: A Framework for Integrating Disciplinary Knowledge and Intercultural Development*, we cannot ignore the increasing cultural diversity of our students. This is true even in technical and scientific courses: "…you are teaching in and experiencing intercultural classrooms *regardless of whether* you want to, *whether* you are aware of it, and *whether* you think it is your responsibility or relevant to your discipline" (p. 15). In other words, this is not a book that asks, "Is culture affecting my readers or users?" Instead, it goes further: "How do I design and communicate effectively in this intercultural environment?"

This is a tough question, and in a refreshing nod to practicality, the authors set out a developmental process instead of a "to do" list. According to them, putting the theory of "intercultural pedagogy" into practice requires time, dialog with others, cultural humility, and critical reflection. This all requires conscious effort that comes about through an iterative series of failures, reframing issues, repeated observations, and refinement.

Helpfully, *Teaching Interculturally* contains reflection questions throughout, such as these from Chapter 2: "Do I have habitual ways of thinking that [I] may be unconsciously 'agreeing' with or perpetuating inequities?" and "Where am I 'stuck' in habitual ways of thinking that get in the way of creating an inclusive environment?" (p. 20).

These critical thinking questions are helpfully explored by extensive case studies, written by teachers who tried to answer them. In Chapter 3, two co-authors reflect on formative cultural experiences, including a funny example of a woman who encounters strong feelings of entitlement about a pillow in her shared apartment. As she becomes "consciously present and aware" of her own response (p. 33), she realizes her unspoken assumptions about personal property. Then she crafts a more skillful response to the situation.

Two more informative case studies are in Chapters 4 and 5. In one, a history teacher creates "history problems" for his students, and in the other, a family studies teacher has her students create video ethnographies, so they avoid over-simplifying other cultures. Both examples show improvements in course design that bring student voices and cultures into the classroom. They also show how critical reflection can drive course revision.

The last chapter packs a punch, as it focuses on "productive discomfort" in the classroom. *Teaching Interculturally* was finalized right after the 2016 national election, which provided several examples of increased cultural tensions in the classroom. In one, a Muslim student encounters an ex-military student in an online forum, and in the other, a class learns to distinguish "racism" from "prejudice" when hate speech graffiti appears on campus.

These examples, along with the well-designed theoretical framework, help the book make a good argument for teaching interculturally.

Jake Ashcraft

Jake Ashcraft is an STC member and a chemistry professor at South Seattle College. He has worked for more than 15 years as a writer, manager, and educator in the scientific sector, focusing on scientific communication. Jake has an MS in Technical Communication from the University of Washington.

Information Design: Research and Practice

Alison Black, Paul Luna, Ole Lund, and Sue Walker, ed. 2017. New York, NY: Routledge. [ISBN 978-0-415-78632-4. 750 pages, including index. USD$79.95 (softcover).]

Information Design: Research and Practice presents a variety of perspectives on information design, including historical, theoretical, cognitive, and practical perspectives. The editors define information design in their introduction as a discipline devoted to making "complex information clear with the needs of users in mind" (p. xi). They then present 49 different chapters by 55 authors on topics ranging from "Icons as carriers of information" to "Medical information design and its legislation." Each chapter delves deeply into its focused topic and provides clear illustrations of associated principles and practices.

The collection is an exhaustive encyclopedia of information design, with much to offer a diverse array of audiences. For academic information design researchers, there are a variety of frameworks that could scaffold research into a variety of topics, from medical communication (p. 715) to science communication (p. 291). There are also 19 chapters on practical information design applications, making this a well-positioned book for use in graduate seminars, though it might be a bit weighty (literally) for the undergraduate classroom.

For technical communicators working in industry, *Information Design* provides many best practices that can help them do everything from understanding the psychology and history behind graphical illustrations (p. 56) to measuring the improvement of communication within an organization (p. 624). The book would probably be best used as a general reference guide for practitioners, as the scope of the book is a bit broad for project-specific issues, such as how to perform a content audit or how to create a controlled vocabulary for an information architecture.

The book at times might not be that useful to academics or practitioners looking to solve specific problems in their research, teaching, or project-based lives. As occurs with many edited collections, the scope of *Information Design* is so broad that it might

be alienating to experienced practitioners looking for assistance with specific problems. The book reads much more like an introductory text to many of the issues, obstacles, and best practices associated with information design. Each of the book's chapters could easily be their own book.

Overall, most readers interested in information design should find something valuable within *Information Design*, whether that be as a general reference, a teaching guide, or a research guide. Practitioners looking for specific solutions to project-driven problems will probably need to look elsewhere.

Guiseppe Getto
Guiseppe Getto is a faculty member at East Carolina University. He is also President and Co-Founder of Content Garden, Inc., a digital marketing and UX consulting firm.

The Zen of Social Media Marketing: An Easier Way to Build Credibility, Generate Buzz, and Increase Revenue

Shama Hyder. 2016. 4th ed. Dallas, TX: BenBella Books. [ISBN 978-1-942952-06-0. 260 pages, including index. USD$16.95 (softcover).]

The Zen of Social Media Marketing: An Easier Way to Build Credibility, Generate Buzz, and Increase Revenue has a very simple premise. Hyder says it is "about understanding the mind-set of people who are using social media and then using it to your advantage" (p. xii). She claims that a paradigm shift has happened within marketing that requires an attendant shift in the way marketers communicate with audiences. Hyder thus defines online marketing as "the art and science (dare I say the Zen?) of leveraging the internet to get your message across so that you can move people to take action" (p. 2). She then proceeds to walk the reader through the main elements of successful social media marketing, including how to attract traffic, how to convert that traffic into customers, and how to transform their social media efforts into long-term, sustainable business development.

Topics covered include optimizing Web sites for marketing; content marketing; Search Engine Optimization (SEO); social media marketing; developing a brand identity over social media; marketing over Facebook, Twitter, and LinkedIn; assessing future social media platforms; social advertising; using video for marketing; and crafting a social media policy. Each chapter provides best practices, tips, and techniques for doing digital marketing, including checklists of do's and don'ts.

This book is largely an introductory text that is probably ideal for readers new to digital marketing. It does contain good advice that advanced practitioners of digital marketing might find useful, including brief case studies of successful campaigns and research findings from the world's top digital marketing firms. The book has clearly been updated sufficiently to still be relevant for current best practices, though the speed at which social media changes is always a challenge for any book professing to provide up-to-the-minute advice.

The Zen of Social Media Marketing is the prototypical book for practitioners as it contains best practices gleaned from a practitioner who has used the best practices she presents to build a successful digital marketing company. Hyder does carefully point out that digital marketing is a lot of work and that there is no guarantee of success. The book's tone seems to indicate that she is genuinely interested in sharing best practices with anyone looking to improve their social media marketing skills.

Data-driven researchers and practitioners will probably find this book to be light on the kinds of information those readers are accustomed to seeing. Most of the book's examples appear to be selected ad hoc and are not meant to generalize in any way, shape, or form. Readers interested in picking up useful skills in social media marketing will find much to like about this book. Readers looking for systematic case studies or other types of research should look elsewhere.

Guiseppe Getto
Guiseppe Getto is a faculty member at East Carolina University. He is also President and Co-Founder of Content Garden, Inc., a digital marketing and UX consulting firm.

Digital Marketing for Dummies

Ryan Deiss and Russ Henneberry. 2017. Hoboken, NJ: John Wiley & Sons. 334 pages, including index. [ISBN 978-1-119-23559-0. USD$29.99 (softcover).]

Leverage Google and Facebook to grow your brand. Automate your lead generation. Generate free and organic traffic. Acquire new leads and customers. Buy online ads like a pro. Monetize your email list. Craft landing pages that convert.

That is quite a list and some of the important topics covered in *Digital Marketing for Dummies*.

Let's look first at how Deiss and Henneberry approach capturing traffic with search marketing. They look at all channels that they feel apply, including Google, YouTube, Pinterest, Amazon, and iTunes.

The authors assume and state their audience is not overly technical. They state that "to succeed in the marketing field, you need to understand marketing, not code. Feel free to leave the technical side to someone who understands code, not marketing" (p. 2).

This appears to be a valid audience and assumption for the content covered. You can also get something out of this book if you are helping someone with a campaign. The help can be in writing effective emails, case study reports, white papers, blog posts, and other assignments we are asked to complete.

Concerning writing blog posts, the authors present 57 blog post ideas; that's a lot. The ideas include posts with lists, case studies, how to's, frequently asked questions, series, definitions, research, checklists, interviews, guides, studies, news, parodies, cartoons, and holiday related information. The list could be useful to those of us looking for blog post ideas.

That is not all that is useful in *Digital Marketing for Dummies*. Can you believe there is even a section on overcoming writer's block? I'm positively impressed with the scope of topics, writing style, and knowledge of the authors.

Jeanette Evans

Jeanette Evans holds an MS in technical communication management from Mercer. She worked with groups such as Philips Medical and Cuyahoga Community College, doing technical writing and supporting courseware development. Jeanette currently co-authors an *Intercom* column on emerging technologies in education and writes on other topics such as project management.

Leading Business Change: A Practical Guide for Transforming Your Organization

Karin Stumpf. 2015. Boca Raton, FL: CRC Press. [ISBN 978-1-4987-2657-3. 130 pages, including index. USD$39.95.]

Leading Business Change: A Practical Guide for Transforming Your Organization is a reliable resource for anyone leading a team through change. The information is familiar for those experienced in change management. For new practitioners, following the guidance Stumpf shares serves as a useful roadmap.

There are some things that I do not like about this book: The cover. The color and graphic design repel me. I don't know why I had such a visceral reaction. The challenge questions at the end of some sections are unnecessary and alienate an educated reader. I also found myself editing the text as I read as I found plenty of phrases I would have removed.

Stumpf clearly understands how to manage change. Most chapters begin with a segment from a fictional story that is meant to instruct. Reading these segments was too disjointed, so I read all the segments as a contiguous story. After this reading, when I re-read the segments, I found them more instructive.

Stumpf follows each segment with text that explains her phased approach to managing change. In her framework, there are three phases: Mobilize (envision the solution), crusade (design the solution), and populate (deliver the solution). Each phase consists of working through four questions. Having led teams through change, I can attest that her framework is realistic and applicable.

We need to talk about how change is hard. Stumpf points outs that we love the honeymoon phase. It's best to move through this phase and focus on the responsibilities of being a change leader, which include modelling, motivating, mediating, shaping, and communicating.

My favorite section of the book is when she talks about the role of communication in change management: "Effective communication means getting

your message across in a way that is effective for your immediate audience" (p. 25). You can read more about Stumpf's views on change later in the book.

As Stumpf takes us through the mobilize, crusade, and populate phases, she reminds us that as leaders, we need to resist wishful thinking and "work with what we have" (p. 41). This type of pragmatic guidance is what makes *Leading Business Change* resonate with me. She continues to give specific guidance as she shares, "Aim for about 10% of the affected people to be aware of the initiative and support your efforts before you even begin to implement the solution" (p. 69) and "Instead of focusing on the results, refocus on what you are taking away from the experience" (p. 119). It's this type of guidance from Stumpf that makes me glad I cut through the textbook feel of the book and kept reading.

If I had read this book before I had taken my first team through a big change, I could have used the book as a guide. Even now, after taking multiple teams through lots of changes, I appreciate reading this material.

Angela Robertson
Angela Robertson works as a senior manager at Microsoft. She works with an amazing team of people. Her team is passionate about delivering content that is integral to the products you depend on for an intelligent cloud and enterprise. Before joining Microsoft, Angela worked at Red Hat and IBM.

Economies of Writing: Revaluations in Rhetoric and Composition

Bruce Horner, Brice Nordquist, Susan M. Ryan, eds. 2017. Logan, UT: Utah State University Press. [ISBN 978-1-60732-522-2. 308 pages, including index. US$29.95 (softcover).]

Economies of Writing: Revaluations in Rhetoric and Composition is a collection focusing on the political economies and economics of writing, writing scholarship, and writing programs. The book contains 17 selections divided into four sections each with a different focus: Institutional/Disciplinary Economies, Economies of Writing Pedagogy and Curriculum, Economies of Language and Medium, and Public Writing Economies. The editors focus on challenging the dominant capitalistic economic lens

through which many examine writing, composition, and rhetoric. The economic and political theories used by many of the authors are left leaning in nature.

The focus in the first section is the economics of writing inherent in the academic institution. In the second section, the focus shifts slightly to focus on the economies in the curriculum, with much of the focus falling on first year and remedial instruction. The third section moves to language economy in global and online marketplaces and covers the economics of being multilingual, the commodification of writing in the knowledge economy, and the growing translingual nature. The fourth section focuses on the intersection of writing economics in the public and governmental spheres of discourse.

This collection's writing is aimed at those either with or pursuing advanced degrees. The authors' choice of language and that contributes to this collection may be difficult for a wider undergraduate audience as much of the content is unsuitable for those without a background in the English academia. Writing program administrators or those involved in the administrative aspects of collegiate English departments may find this of value Those teaching in these departments, from graduate students to departmental heads and administrators, will find the discussion useful.

The technical communication professional may find value in this collection, particularly those desiring more information on the economics of writing in the college classroom, those working with public policy proposals, and those interested the economics of writing and linguistics related to the Internet. Technical communication educators may find new ways of thinking about composition and rhetoric related to changing economic realities of writing programs. The professional technical communicator with limited involvement in academia, public policy, or interest on the intersection of writing, composition, and rhetoric with economic and political theory will find little of value here.

Christopher Matthys
Christopher Matthys is graduate student at the University of Alabama in Huntsville studying technical communications. His undergraduate degree is in political science and philosophy. Christopher also writes about different subjects on his website variousinterests.net.

20-23
MAY
2018

Orlando, Florida

Register Now

65TH ANNUAL

Technical Communication Summit

Certified Professional Technical Communicator™ (CPTC)

CERTIFIED PROFESSIONAL Technical Communicator

CPTC™

FOUNDATION

Project Planning
Project Analysis
Content Development
Organizational Design
Written Communication
Reviewing & Editing
Visual Communication
Content Management
Production & Delivery

Advance your Career and the Profession
Earn the CPTC Foundation Credential Today

The Certified Professional Technical Communicator (CPTC) credential assures employers, colleagues, and the public that you have the knowledge and skill to handle complex technical communication projects from the project planning stage through production and delivery.

Benefits
Why earn the CPTC credential? Because the CPTC credential:

- Distinguishes you from your peers;
- Shows you have the most up-to-date knowledge in the field;
- Opens up job opportunities and enhances job mobility;
- Elevates the profession;
- Gives you a sense of pride in your career; and
- Demonstrates your commitment to the field.

The CPTC credential gives you the edge you need to stand out to employers.

Continuing Education Requirements
Points may be obtained the following ways:

Event	Points
STC Annual Membership (any membership type for Foundation certificants)	2
STC Recorded Webinar (self-study)	1
STC Live Educational Webinar (free, sponsored, and community webinars excluded)	2
STC Online Courses	6
STC Summit Pre-Conference Courses (full day)	6
STC Summit Pre-Conference Courses (half day)	3
STC Annual Summit	8
Begin and complete a college-accredited course related to the Technical Communication field	8
Published articles that relate to any aspect of *Technical Communication* (2/article)	2
Published books publicly available on topics related to *Technical Communication* (5/book)	5
Presentations at conferences related to aspects of *Technical Communication* (2/presentation)	2
Total needed within 2 years post-certification date	**12**

Fees
Exam fees: STC Members $250, Non-Members, $495

Be a leader. *Take your career to the next level by obtaining your credential. It's the most efficient way to prove your skills and knowledge in the technical communication field.*

CONTACT
For more information about certification and to start the process, visit *www.stc.org* or email *stc@stc.org.*

**Advance your Career and the Profession — Earn the CPTC Foundation Credential Today!
Learn more at www.stc.org/certification**

Lyn Gattis, Editor

Communication

The brand personalities of brand communities: An analysis of online communication

"Online brand communities provide a wealth of insights about how consumers perceive and talk about a brand, rather than what the firm communicates about the brand. The purpose of this paper is to understand whether the brand personality of an online brand community, rather than of the brand itself, can be deduced from the online communication within that brand community. . . . The paper is empirical in nature. The authors use community-generated content from eight online brand communities and perform content analysis using the text analysis software Diction. The authors employ the five brand personality dictionaries (competence, excitement, ruggedness, sincerity and sophistication) from the Pitt et al. (2007) dictionary source as the basis for the authors' analysis. . . . This is the first paper examining the nature of online brand communities by means of computerized content analysis. The authors outline a number of areas that marketing scholars could explore further based on the authors' analysis. The paper also highlights implications for marketers when establishing, managing, monitoring and analyzing online brand communities."

Yvonne Wade Sanchez

Communicating organizational trust: An exploration of the link between discourse and action

"Communication has frequently received attention in studies on trust. One question that has remained unanswered is, how is organizational trust communicated? Consistent with the view of organizations as discursive entities, research presented here examines discursive qualities of trust and attempts to provide an understanding of the manner in which organizational trust is communicated. Research presented in this article includes the results of two studies conducted in two different parts of the country: a large metropolitan area in the southeastern United States and a regional center in the south. Findings reveal that against the background of a continuous discursive and interactional flow, trust is communicated as a speech act characterized by the world-to-words direction of fit. Findings have implications for both theory and practice."

Katherine Wertz

An examination of the effects of self-regulatory focus on the perception of the media richness: The case of e-mail

Armengol, X., Fernandez, V., Simo, P., & Sallan, J. (2017). *International Journal of Business Communication, 54*(4), 394–407. doi: 10.1177/2329488415572780

"Communication is a key element in organizations' business success. The media richness theory and the channel expansion theory are two of the most influential theories regarding the selection and use of communication media in organizations; however, literature has focused little on the effects of self-regulation by managers and employees in these theories. To analyze these topics, this study develops an empirical investigation by gathering data from 600 managers and employees using a questionnaire. The results suggest that the perception of media richness is positively affected when the individual shows a promotion focus or strategy."

Katherine Wertz

Huggable communication medium maintains level of trust during conversation game

Takahashi, H., Ban, M., Osawa, H., Nakanishi, J., Sumioka, H., & Ishiguro, H. (2017). *Frontiers in Psychology, 8*, Article 1862. doi: 10.3389/fpsyg.2017.01862

"There have been several attempts in recent years to develop a remote communication device using sensory modalities other than speech that would induce a user's positive experience with his/her conversation partner. Specifically, Hugvie is a human-shaped pillow as well as a remote communication device enabling users to combine a hugging experience with telecommunication to improve the quality of remote communication. The present research is based on the hypothesis that using Hugvie maintains users' level of trust toward their conversation partners in situations prone to suspicion. The level of trust felt toward other remote game players was compared between participants using Hugvie and those using a basic communication device while playing a modified version of Werewolf, a conversation-based game, designed to evaluate trust. Although there are

always winners and losers in the regular version of Werewolf, the rules were modified to generate a possible scenario in which no enemy was present among the players and all players would win if they trusted each other. [The authors] examined the effect of using Hugvie while playing Werewolf on players' level of trust toward each other and [their] results demonstrated that in those using Hugvie, the level of trust toward other players was maintained."

Yvonne Wade Sanchez

Nationalism versus animal rights: A semantic network analysis of value advocacy in corporate crisis

Yang, A., & Veil, S. (2017). *International Journal of Business Communication, 54*(4), 408–430. doi: 10.1177/2329488415572781

"This case study provides an illustrative example of how nationalism can be exploited to shift media attention in a crisis involving international organizations. Semantic network analysis is used to explore the relationships among different meanings packaged in a corporation's value advocacy messages. The semantic network analysis shows the semantic structure of the value advocacy messages and maps the structure of media coverage before and after the advocacy messages were released. The findings indicate that the value advocacy campaign effectively diversified the focus of media coverage. Implications for business communication research and practice are provided."

Katherine Wertz

No place for negative emotions? The effects of message valence, communication channel, and social distance on users' willingness to respond to SNS status

Ziegele, M., & Reinecke, L. (2017). *Computers in Human Behavior, 75,* 704–713. doi: 10.1016/j.chb.2017.06.016

"The present study contributes to the investigation of communicative norms and social support in Social Network Sites (SNSs). [The authors] suggest that a

positivity bias restricts the availability of social support users receive from others via public responses to negative status updates. Moderated mediation analyses of the data of an online experiment (N ¼ 870, Mage ¼ 25.16 years, 64% female) show that users are less willing to comment on negative status updates than on positive ones. In contrast, users are more willing to respond to negative status updates with private messages. These effects are moderated by the strength of the relationship between sender and receiver of the status update and mediated by perceived message appropriateness and support urgency. The results suggest that SNS users canalize supportive reactions to negative experience of their close SNS friends through private modes of communication."

Yvonne Wade Sanchez

Design

Design thinking methodology: A case study of "radical collaboration" in the wearables research collaboratory

Duin, A. H., Moses, J., McGrath, M., Tham, J., & Ernst, N. (2017). *Connexions / International Professional Communication Journal, 5*(1), 45–74. doi: 10.21310/cnx.5.1.17.duietal

"In this research article, [the authors] share a case study of the Wearables Research Collaboratory (WRC, wrcollab.umn.edu) showcasing how [they] came to apply design thinking methodology to the development and deployment of a technical and professional communication experience designed to enable cross-cultural, innovative insights and solutions. Over 12 weeks, [their] diverse team of eight applied design thinking methodology to [their] individual and collective investigations of wearable technologies, emphasizing culture and pedagogy, ability to shift perspective and better understand one's position in the world, and the challenges and opportunities posed by these devices. [Their] discussion includes focus on the cultures of seniority and academic position as well as the importance of learning experiences that reveal the true complexity of problems and that support

sustained periods of question finding, ideation, and visualization. [The authors] conclude with discussion of radical collaboration as a model for the application of design thinking."

Lyn Gattis

Education

Beyond flexibility and convenience: Using the community of inquiry framework to assess the value of online graduate education in technical and professional communication

Watts, J. (2017). *Journal of Business and Technical Communication, 31*(4), 481–519. doi: 10.1177/1050651917713251

"Online learning modes can provide convenience and flexibility to students. But communicating the value of online education in technical and professional communication should not end there. Program directors should rearticulate the narrative about the value of online graduate education beyond flexibility and convenience by reevaluating the ways that program assessment is designed and implemented. This pilot study suggests that a community of inquiry framework can help to communicate the value of the online learning environment to a variety of stakeholders, including prospective and current students, administrators, instructors, and potential employers."

Sean C. Herring

But is that relevant here? A pedagogical model for embedding translation training within technical communication courses in the US

Gonzales, L. (2017). *Connexions / International Professional Communication Journal, 5*(1), 75–108. doi: 10.21310/cnx.5.1.17.gon

"This article illustrates how self-identified monolingual technical communication students can prepare to work with translators in the creation and dissemination of multilingual content. Drawing on a case study that traced a collaboration between a Language Services office and a technical communication course in the US, the author suggests technical communication students can benefit from understanding the practices and activities of translation, primarily by being better prepared to design and work with multilingual audiences in cross-cultural settings. Through a discussion of this collaboration, the author argues translation is a valuable aspect of contemporary technical communication, helping students understand the challenges and affordances of designing for a wide range of users."

Lyn Gattis

Teaching a "critical accessibility case study": Developing disability studies curricula for the technical communication classroom

Browning, E., & Cagle, L. (2017). *Journal of Technical Writing and Communication, 47*(4), 440–463. doi: 10.1177/0047281616646750

". . . [T]he authors offer an approach to including disability studies in TC curricula through the inclusion of a 'critical accessibility case study' (CACS). In explicating the theoretical and practical foundations that support teaching a CACS in TC courses, the authors provide an overview of how TC scholars have productively engaged with disability studies and case studies to question both our curricular content and classroom practices. . . . "

Anita Ford

Ethics

Role of design education in fostering values of social responsibility in designers

Bothra, S. (2017). *Connexions / International Professional Communication Journal, 5*(1), 11–44. doi: 10.21310/cnx.5.1.17.bot

"Professional communication and industrial design have become a forceful, persuasive and omnipresent reality in shaping, serving and significantly changing the society and the environment at local as well as global levels. A professional designer is a significant contributor in creating the 'world by design,' and shares the social responsibility of the consequences of the acts of design, with blurring of traditional and rigid boundaries of specialization. This research article examines 'what is' the role of the formal design education programs in fostering values of social responsibility in their students, the future professionals. The primary field study and research for this article was undertaken in India as a part of a doctoral research. Nevertheless, it brings forth insights valuable for multiple locations and parallel contexts. The concluding part of the article takes a propositional and conceptual route to derive 'what ought to be'—as models for future action."

Lyn Gattis

Health communication

Beyond the consultation room: Proposals to approach health promotion in primary care according to health-care users, key community informants and primary care centre workers

Berenguera, A., Pons-Vigués, M., Moreno-Peral, P., March, S., Ripoll, J., Rubio-Valera, M., et al. (2017). *Health Expectations, 20*(5), 896–910. doi: 10.1111/hex.12530

". . . Primary health care (PHC) is the ideal setting to provide integrated services centred on the person and to implement health promotion (HP) activities. [The researchers' objective was to] identify proposals to

approach HP in the context of primary care according to health-care users aged 45–75 years, key community informants and primary care centre (PCC) workers. . . . [The study involved] descriptive-interpretive qualitative research with 276 participants from 14 PCC of seven Spanish regions. A theoretical sampling was used for selection. A total of 25 discussion groups, two triangular groups and 30 semi-structured interviews were carried out. A thematic interpretive contents analysis was carried out. . . . Participants consider that HP is not solely a matter for the health sector and they emphasize intersectoral collaboration. They believe that it is important to strengthen community initiatives and to create a healthy social environment that encourages greater responsibility and participation of health-care users in decisions regarding their own health and better management of public services and resources. . . . Informants emphasize that HP should be [a] person-centred approach and empathic communication. . . .”

Yvonne Wade Sanchez

Toward audience involvement: Extending audiences of written physician notes in a hospital setting

Kastman Breuch, L. A., Bakke, A., Thomas-Pollei, K., Mackey, L. E., & Weinert, C. (2016). *Written Communication, 33*(4), 418–451. doi: 10.1177/0741088316668517

“This article explores rhetorical implications of extending the audience of written physician notes in hospital settings to include patients and/or family members (the OpenNotes program). Interviews of participating hospital patients and family members (n = 16) underscored the need for more complex understandings of audience beyond 'universal' and 'particular' explanations. Interviews were organized around the aspects of comprehension, affect/emotion, and likes/dislikes about receiving notes. Results from these interviews indicated that participants understood the notes overall but had questions about abbreviations and technical terms. Many participants felt reassured about the care they were receiving, and many liked having the notes as a reference and springboard for further discussion with health care staff. A more detailed content analysis of the interview data yielded themes of

document use, readability, involvement, and physician care. Findings from this study reveal an expansion of audience in this case to include both universal and particular audiences. Also, findings point to the possibility of audience involvement among patients and family members through activities such as asking questions about the physician notes. This study has implications for other forms of written communication that may extend readership in novel ways.”

Lyn Gattis

Intercultural issues

Designing professional communication across cultures [special issue]

Zhou, Q., & Getto, G. (eds.). (2017). *Connexions / International Professional Communication Journal, 5*(1), 3–7. doi: 10.21310/cnx.5.1.17. zhoetal

“In the last thirty years, two trends have transformed the work of professional communicators. On the one hand, a global economy has increasingly placed professional communicators in multilingual and multicultural work environments. In such environments, cultural borders are blurred and ideas are shared across individuals and teams. On the other hand, advances in technology have revolutionized the ways communication products are produced. Design has risen to the forefront of professional communication. This special issue focuses on the intersection between designing professional communication and work within multicultural environments.”

Lyn Gattis

Mapping the cultural context of care: An approach to patient-centered design in international contexts

St.Amant, K. (2017). *Connexions / International Professional Communication Journal, 5*(1), 109–124. doi: 10.21310/cnx.5.1.17.sta

"In today's interconnected global society, health and medical communication must increasingly cover a growing range of international and intercultural contexts. Meeting the communication and design expectations of audiences from different cultures and in other nations, however, is a complex process. By focusing on usability, individuals can create materials that effectively meet patient expectations associated with the context(s) in which care—or processes related maintaining or improving one's health and wellness—is administered. To facilitate this process, this entry presents international patient experience design (I-PXD) as an approach that can help individuals better understand the dynamics of usability in different contexts around the world. By using prototype theory as a foundation for mapping the contexts in which patients use materials, I-PXD allows individuals to identify the variables affecting usability in different parts of the globe and design materials to account for those factors."

Lyn Gattis

Management

The mediating role of charismatic leadership communication in a crisis: A Malaysian example

Jamal, J., & Bakar, H. A. (2017). *International Journal of Business Communication, 54*(4), 369–393. doi: 10.1177/2329488415572782

"This study develops a model to advance research on public organization reputation by integrating crisis responsibility with charismatic leadership communication. Based on situational crisis communication theory, the model was tested using structural equation modeling with data obtained from a sample of 383 employees of public

organizations in Malaysia. The mediation model indicated that the dynamic mechanism of charismatic leadership communication partially mediated the relationship between crisis responsibility and perceived organizational reputation during a crisis. These findings validated the proposed model and, in particular, confirmed empirically the central role of charismatic leadership communication processes in organization. This study provides insights into the role of charismatic leadership communication in the organizational reputation processes. The model established can serve as an instructive guide for both organization and corporate leaders in managing a crisis and reputation. A practical implication of the findings is that, during a crisis, a crisis leader should engage in charismatic leadership communication effectively to mitigate the crisis impact and strengthen organizational reputation. More important, the findings indicate that charismatic leadership communication contributed to organizational reputation explicitly brought charismatic leadership communication to the forefront of organizational reputation management."

Katherine Wertz

Professional issues

Religion and the professional ethos: The YMCA, Dale Carnegie, and the "business man"

Cummings, L. (2016). *Rhetoric, Professional Communication, and Globalization, 9*(1), 6–27. [doi: none]

"Many Protestant ways of thinking, derived from Judeo-Christian ideologies, are embedded in the discourses and practices of professional communication, even when religious ideologies are not overtly seen. To demonstrate this, [the author] first examine[s] the close ties between Christianity and the pre-disciplinary formations of professional communication in the Young Men's Christian Association's (YMCA) teaching of technical and business writing. Secondly, [the author] show[s] how the YMCA's construction of character and business ethos is rearticulated by one of the most

influential figures in business culture, Dale Carnegie. In his popular book first published in 1936, *How to Win Friends and Influence People* (1981), Carnegie used the 'psychological man' to rearticulate the religious, masculine ethos of the nineteenth century for the business world, while retaining ethical checks derived from religious discourses on cultivation, discipline, and self-control. Though professional communication classrooms and textbooks still retain many of these relational principles and the masculine persona they entail, this professional ethos is rarely balanced by the deeper ethical implications of Carnegie's holistic vision. Re-incorporating a more holistic vision, while also reflecting on many of the masculine and individualist leanings, can help us understand how the professional ethos is influenced by other religious and ethical perspectives, perhaps deepening how we deploy the professional ethos in the United States and abroad."

Lyn Gattis

Research

Editorial re-considering research: Why we need to adopt a mixed-methods approach to our work

Lauer, C. (2016). *Communication Design Quarterly, 4*(3), 46–50. [doi: none]

"In this editorial, [the author] argues for expanding our methods of research to include a greater emphasis on quantitative and mixed-methods approaches. This expansion will complement and help frame the qualitative data collection we already prioritize in the fields of writing studies and design. [The author] discusses the benefits of a mixed-methods approach and presents ten recommendations for how scholars, especially those who may be new to quantitative methods, can learn and employ these methods. [The author] suggests that we need to value this more comprehensive approach to data collection in order to better answer the many questions that remain uninvestigated in our field."

Lyn Gattis

The singer of technology: The oral-based origins of technical communication in the ancient world

Pochatko, A. (2017). *Journal of Technical Writing and Communication, 47*(4), 464–477. doi: 10.1177/0047281616646751

"Using frameworks from Ong, Turner, and Frohmann, the author analyzes excerpts from Hesiod's Works and Days and from the Book of Exodus for technical features. These documents were found to contain technical information that was best used in face-to-face interaction. Further, the documents exhibit evidence of residual orality, an encroachment of oral register into written. These findings suggest that technical communication originates in the genres and oral registers of ancient cultures. Such details have been missed owing to a written bias of technical communication and of scholars who look upon such works only as literature. Presently, oral-based information is viewed as informal and less authoritative than written information. In the absence of writing, however, information can only be transmitted orally."

Anita Ford

Studies of user-generated content: A systematic review

Naab, T. K., & Sehl, A. (2016). *Journalism, 18*(10), 1256–1273. doi: 10.1177/1464884916673557

"This article presents a review of communication research on user-generated content with a special focus on studies which include a content analysis. The trends of research on this comparatively new and rapidly developing subject are systematically discussed and desiderata are identified. The evaluation is based on a content analysis of pertinent approaches in nine relevant international peer-reviewed journals published from 2004 to 2012. From the results, the article concludes that user-generated content is approached by scholars from a variety of perspectives and offers scope for interdisciplinary cooperation but also notes that several of the challenges posed by the continuously changing nature of the content are not fully met."

Yvonne Wade Sanchez

Value arguments in science research articles: Making the case for the importance of research

Carter, M. (2016). *Written Communication, 33*(3), 302–327. doi: 10.1177/0741088316653394

"It is in the interest of scholarly journals to publish important research and of researchers to publish in important journals. One key to making the case for the importance of research in a scholarly article is to incorporate value arguments. Yet there has been no rhetorical analysis of value arguments in the literature. In the context of rhetorical situation, stasis theory, and Swales's linguistic analysis of moves in introductions, this article examines value arguments in introductions of science research articles. Employing a corpus of 60 articles from three science journals, the author analyzes value arguments based on Toulmin's definition of argument and identifies three classes of value arguments and seven functions of these arguments in introductions. This analysis illuminates the rhetorical construction of value in science articles and provides a foundation for the empirical study of value in scholarship."

Lyn Gattis

Usability

Can I leave this one out? The effect of dropping an item for the SUS

Lewis, J. R., & Sauro, J. (2017). *Journal of Usability Studies, 13*(1), 38–46. [doi: none]

"There are times when user experience practitioners might consider using the System Usability Scale (SUS), but there is an item that just doesn't work in their context of measurement. For example, the first item is 'I think I would like to use this system frequently.' If the system under study is one that would only be used infrequently, then there is a concern that including this item would distort the scores, or at best, distract the participant. The results of the current research show that the mean scores of all 10 possible nine-item variants of the SUS are within one point (out of a hundred) of the mean of the

standard SUS. Thus, practitioners can leave out any one of the SUS items without having a practically significant effect on the resulting scores, as long as an appropriate adjustment is made to the multiplier (specifically, multiply the sum of the adjusted item scores by 100/36 instead of the standard 100/40, or 2.5, to compensate for the dropped item)."

Ginnifer Mastarone

Rethinking self-reported measure in subjective evaluation of assistive technology

Hossain, G. (2017). *Human-centric Computing and Information Sciences, 7:23.* doi: 10.1186/s13673-017-0104-7

"Self-reporting is used as a subjective measure of usability study of technology solutions. In assistive technology research, more than often the 'coordinator' directly assist[s] the 'subject' in the scoring process. This makes the rating process slower and also introduces bias, such as, 'Forer effect' and/or 'Hawthorne' effect. To address these issues [the author] propose[s] to use technology mediated interaction between the 'subject' and the 'coordinator' in evaluating assistive technology solutions. The goal is to combine both the qualitative and quantitative scores to create a relatively unbiased rating system. Empirical studies were performed on two different datasets in order to illustrate the utility of the proposed approach. It was observed that, the proposed hybrid rating is relatively unbiased for usability study."

Yvonne Wade Sanchez

SUPR-QM: A questionnaire to measure the mobile app user experience

Sauro, J. & Zarolia, P. (2017). *Journal of Usability Studies, 13*(1), 17–37. [doi: none]

"In this paper, [the authors] present the SUPR-Qm, a 16-item instrument that assesses a user's experience of a mobile application. Rasch analysis was used to assess the psychometric properties of items collected from four independent surveys (N = 1,046) with ratings on 174 unique apps. For the final instrument, estimates of internal

consistency reliability were high (alpha = .94), convergent validity was also high, with significant correlations with the SUPR-Q (.71), UMUX-Lite (.74), and likelihood-to-recommend (LTR) scores (.74). Scores on the SUPR-Qm correlated with the number of app reviews in the Google Play Store and Apple's App Store (r = .38) establishing adequate predictive validity. The SUPR-Qm, along with category specific questions, can be used to benchmark the user experience of mobile applications."

Ginnifer Mastarone

Technology acceptance and user experience: A review of the experiential component in HCI

Hornbæk, K., & Hertzum, M. (2017). *ACM Transactions on Computer-Human Interaction (TOCHI), 24*(5), Article 33. doi: 10.1145/3127358

"Understanding the mechanisms that shape the adoption and use of information technology is central to human–computer interaction. Two accounts are particularly vocal about these mechanisms, namely the technology acceptance model (TAM) and work on user experience (UX) models. In this study, [the authors] review 37 papers in the overlap between TAM and UX models to explore the experiential component of human–computer interactions. The models provide rich insights about what constructs influence the experiential component of human–computer interactions and about how these constructs are related. For example, the effect of perceived enjoyment on attitude is stronger than those of perceived usefulness and perceived ease of use. It is less clear why the relations exist and under which conditions the models apply. [The authors] discuss four of the main theories used in reasoning about the experiential component and, for example, point to the near absence of psychological needs and negative emotions in the models. In addition, most of the reviewed studies are not tied to specific use episodes, thereby bypassing tasks as an explanatory variable and undermining the accurate measurement of experiences, which are susceptible to moment-to-moment changes. [The authors] end by summarizing the implications of [their] review for future research."

Yvonne Wade Sanchez

Writing

Anticipating delivery: A case study of domestic partner benefit (DPB) advocacy

Little, M. D. (2017). *Written Communication, 34*(1), 75–99. doi: 10.1177/0741088316685730

"Delivery has often been treated as an afterthought of the 'real work' of writing. This article demonstrates how writers in some contexts must think very carefully about delivery from the very beginning of their process. Tracking collaborative writers' talk, this article demonstrates how a group of writers works to anticipate delivery by repeatedly constructing delivery narratives— that is, stories about the future handoff of their document to audiences. In a complex case of LGBT policy advocacy, the writers weave together multiple delivery narratives in order to achieve consensus, revealing the influence of discursive voices, perspectives, personal and institutional histories, and disciplinary training on the group's rhetorical strategies. This article also considers how an experienced administrative lawyer constructs delivery narratives, revealing an expert's strategy to try to get a legitimate hearing for a novel legal interpretation."

Lyn Gattis

Composing networks: Writing practices on mobile devices

Swarts, J. (2016). *Written Communication, 33*(4), 385–417. doi: 10.1177/0741088316666807

"This article is an investigation of composing practices through which people create networks with mobile phones. By looking through the lens of actor-network theory, the author portrays the networking activity of mobile phone users as translation, what Latour describes as an infralanguage to which different disciplinary perspectives can be appended. Given how much mobile phone use is information-based, the author describes how five people composed on mobile phones to create coordinated networks of professional and domestic activity. To arrive at this discussion, the author first considers the objectives of mobile

networking, which include creating a sense of place and coordination within that space. The author then describes the findings of a case study of mobile phone users who build translational networks. The discussion focuses on the participants' composing practices."

Lyn Gattis

Moments and metagenres: Coordinating complex, multigenre narratives

McNely, B. (2017). *Journal of Business and Technical Communication, 31*(4), 443–480. doi: 10.1177/1050651917713252

"Professional and technical communication increasingly involves developing narratives that traverse multiple genres, media formats, and publishing venues. In marketing and advertising, brand stories unfold across Web sites, ad campaigns, and social media properties. A fundamental challenge in such work is multigenre coordination, leading to a key question: How do professionals manage complex ecologies of genres, media content, and interactions in ways that build and sustain narrative coherence and audience engagement? Reporting findings from a study of transmedia writers, this article argues that metageneric texts may emerge as important coordinative resources for planning, developing, and tracking uptakes within multigenre narratives. It thus contributes to professional and technical communication by describing a widening gap in scholarly approaches to metagenre; arguing for empirical examinations of metageneric constructs in tangible, flexible texts that serve situated needs in given activity systems; and demonstrating how such texts may emerge and play a formidable role in coordinating contemporary, multigenre narratives."

Sean C. Herring

The professional work of unprofessional tweets: Microblogging career situations in African American hush harbors

Walls, D. M. (2017). *Journal of Business and Technical Communication, 31*(4), 391–416. doi:10.1177/1050651917713195

"This article examines the tactical online rhetorical choices of a young African American professional communicator, Gina. Drawing on situated analysis to show how Gina engaged with her African American Hush Harbor (AAHH) of young professionals online, the author argues that Gina used Twitter to maintain professional network ties in her AAHH community while resisting organizational discourses of surveillance. The author further argues that analyzing particular choices in boundaryless career situations allows us to see important nontask-based professional writing activity."

Sean C. Herring

Writing and women's retention in engineering

Mallette, J. C. (2017). *Journal of Business and Technical Communication, 31*(4), 417–442. doi: 10.1177/1050651917713253

"Engineering disciplines have focused on recruiting and retaining women, assessing factors that contribute to decisions to enter or exit the field at every level. While many studies have examined writing in engineering disciplines, few have looked at writing's role in women's decisions to remain in or leave engineering. Using a case study of a professional civil engineer, Katy, this study examines the role that writing played in her dissatisfaction with engineering and her ultimate decision to leave the field. The author analyzes two genres of writing, meeting minutes and a preliminary engineering report, to explore how Katy's writing practices often ran counter to her coworkers' or supervisors' approaches. While a single case study makes generalization impossible, this work opens the door to future research that accounts for writing in recruiting and retaining women."

Sean C. Herring